SEQUENCE LISTING

<110> Bayer AG

<120> Regulation of human transient receptor potential
     channel

<130> RCK-27

<140>
<141>

<150> US60/372899
<151> 2002-04-16

<150> US60/375139
<151> 2002-04-22

<160> 21

<170> PatentIn Ver. 2.1

<210> 1
<211> 5668
<212> DNA
<213> Homo sapiens

<400> 1
```
gtcacttagg aaaaggtgtc ctttcgggca gccgggctca gcatgaggaa cagaaggaat 60
gacactctgg acagcacccg gaccctgtac tccagcgcgt ctcggagcac agacttgtct 120
tacagtgaaa gcgacttggt gaattttatt caagcaaatt ttaagaaacg agaatgtgtc 180
ttctttacca aagattccaa ggccacggag aatgtgtgca agtgtggcta tgcccagagc 240
cagcacatgg aaggcacccca gatcaaccaa agtgagaaat ggaactacaa gaaacacacc 300
aaggaatttc ctaccgacgc ctttggggat attcagtttg agacactggg gaagaaaggg 360
aagtatatac gtctgtcctg cgacacggac gcggaaatcc tttacgagct gctgacccag 420
cactggcacc tgaaaacacc caacctggtc atttctgtga ccggggggcgc caagaacttc 480
gccctgaagc cgcgcatgcg caagatcttc agccggctca tctacatcgc gcagtccaaa 540
ggtgcttgga ttctcacggg aggcacccat tatgccctga cgaagtacat cggggaggtg 600
gtgagagata acaccatcag caggagttca gaggagaata ttgtggccat tggcatagca 660
gcttggggca tggtctccaa ccgggacacc ctcatcagga attgcgatgc tgagggctat 720
tttttagccc agtaccttat ggatgacttc acaagggatc cactgtatat cctggacaac 780
aaccacacac atttgctgct cgtggacaat ggctgtcatg acatcccac tgtcgaagca 840
aagctccgga atcagctaga gaagcatatc tctgagcgca ctattcaaga ttccaactat 900
ggtggcaaga tccccattgt gtgttttgcc caaggaggtg gaaaagagac tttgaaagcc 960
atcaataccт ccatcaaaaa taaaattcct tgtgtggtgg tggaaggctc gggccggatc 1020
gctgatgtga tcgctagcct ggtggaggtg gaggatgccc cgacatcttc tgccgtcaag 1080
gagaagctgg tgcgcttttt accccgcacg gtgtcccggc tgtctgagga ggagactgag 1140
agttggatca aatggctcaa agaaattctc gaatgttctc acctattaac agttattaaa 1200
atggaagaag ctggggatga aattgtgagc aatgccatct cctacgctct atacaaagcc 1260
ttcagcacca gtgagcaaga caaggataac tggaatgggc agctgaagct tctgctggag 1320
tggaaccagc tggacttagc caatgatgag attttcacca atgaccgccg atgggagtct 1380
gctgaccttc aagaagtcat gtttacggct ctcataaagg acagacccaa gtttgtccgc 1440
ctctttctgg agaatggctt gaacctacgg aagtttctca cccatgatgt cctcactgaa 1500
ctcttctcca accacttcag cacgcttgtg taccggaatc tgcagatcgc caagaattcc 1560
tataatgatg ccctcctcac gtttgtctgt aaactggttg cgaacttccg aagaggcttc 1620
cggaaggaag acagaaatgg ccgggacgag atggacatag aactccacga cgtgtctcct 1680
attactcggc accccctgca agctctcttc atctgggcca ttcttcagaa taagaaggaa 1740
ctctccaaag tcatttggga gcagaccagg ggctgcactc tggcagccct gggagccagc 1800
aagcttctga agactctggc caaagtgaag aacgacatca atgctgctgg gggtccgag 1860
gagctggcta atgagtacga gacccgggct gttgagctgt cactgagtg ttacagcagc 1920
gatgaagact tggcagaaca gctgctggtc tattcctgtg aagcttgggg tggaagcaac 1980
tgtctggagc tggcggtgga ggccacagac cagcatttca ccgcccagcc tggggtccag 2040
aattttcttt ctaagcaatg gtatgagag atttcccgag acaccaagaa ctggaagatt 2100
atcctgtgtc tgtttattat acccttggtg ggctgtggct ttgtatcatt taggaagaaa 2160
cctgtcgaca agcacaagaa gctgctttgg tactatgtgg cgttcttcac ctcccccttc 2220
gtggtcttct cctggaatgt ggtcttctac atcgccttcc tcctgctgtt tgcctacgtg 2280
ctgctcatgg atttccattc ggtgccacac ccccccgagc tggtcctgta ctcgctggtc 2340
tttgtcctct tctgtgatga agtgagacag tggtacgtaa atggggtgaa ttattttact 2400
```

```
gacctgtgga atgtgatgga cacgctgggg cttttttact tcatagcagg aattgtattt 2460
cggctccact cttctaataa aagctctttg tattctggac gagtcatttt ctgtctggac 2520
tacattattt tcactctaag attgatccac atttttactg taagcagaaa cttaggaccc 2580
aagattataa tgctgcagag gatgctgatc gatgtgttct tcttcctgtt cctcttttgcg 2640
gtgtggatgg tggcctttgg cgtggccagg caagggatcc ttaggcagaa tgagcagcgc 2700
tggaggtgga tattccgttc ggtcatctac gagccctacc tggccatgtt cggccaggtg 2760
cccagtgacg tggatggtac cacgtatgac tttgcccact gcaccttcac tgggaatgag 2820
tccaagccac tgtgtgtgga gctggatgag cacaacctgc cccggttccc cgagtggatc 2880
accatccccc tggtgtgcat ctacatgtta tccaccaaca tcctgctggt caacctgctg 2940
gtcgccatgt ttggctacac ggtgggcacc gtccaggaga acaatgacca ggtctggaag 3000
ttccagaggt acttcctggt gcaggagtac tgcagccgcc tcaatatccc cttccccttc 3060
atcgtcttcg cttacttcta catggtggtg aagaagtgct tcaagtgttg ctgcaaggag 3120
aaaaacatgg agtcttctgt ctgctgtttc aaaaatgaag acaatgagac tctggcatgg 3180
gagggtgtca tgaaggaaaa ctaccttgtc aagatcaaca caaaagccaa cgacacctca 3240
gaggaaatga ggcatcgatt tagacaactg gatacaaagc ttaatgatct caagggtctt 3300
ctgaaagaga ttgctaataa aatcaaataa aactgtatga aactctaatg gagaaaaatc 3360
taattatagc aagatcatat taaggaatgc tgatgaacaa ttttgctatc gactactaaa 3420
tgagagattt tcagacccct gggtacatgg tggatgattt taaatcaccc tagtgtgctg 3480
agaccttgag aataaagtgt gtgattggtt tcatacttga agacggatat aaaggaagaa 3540
tatttccttt atgtgtttct ccagaatggt gcctgtttct ctctgtgtct caatgcctgg 3600
gactggaggt tgatagttta agtgtgttct taccgcctcc ttttttccttt aatcttattt 3660
ttgatgaaca catatatagg agaacatcta tcctatgaat aagaacctgg tcatgcttta 3720
ctcctgtatt gttattttgt tcatttccaa ttgattctct acttttccct tttttgtatt 3780
atgtgactaa ttagttggca tattgttaaa agtctctcaa attaggccag attctaaaac 3840
atgctgcagc aagaggaccc cgctctcttc aggaaaagtg tttttcatttc tcaggatgct 3900
tcttacctgt cagaggaggt gacaaggcag tctcttgctc tcttggactc accaggctcc 3960
tattgaagga accacccccca ttcctaaata tgtgaaaagt cgccccaaat gcaaccttga 4020
aaggcactac tgactttgtt cttattggat actcctctta tttattattt ttccattaaa 4080
aataatagct ggctattata gaaaatttag accatacaga gatgtagaaa gaacataaat 4140
tgtccccatt accttaaggt aatcactgct aacaatttct ggatggtttt tcaagtctat 4200
ttttttttcta tgtatgtctc aattctcttt caaaatttta cagaatgtta tcatactaca 4260
tatatacttt ttatgtaagc ttttttcactt agtattttat caaatatgtt tttattatat 4320
tcatagcctt cttaaacatt atatcaataa ttgcataata ggcaacctct agcgattacc 4380
ataattttgc tcattgaagg ctatctccag ttgatcattg ggatgagcat ctttgtgcat 4440
gaatcctatt gctgtatttg ggaaaatttt ccaaggttag attccaataa atatctattt 4500
attattaaat attaaaatat cgatttatta ttaaaaccat ttataaggct ttttcataaa 4560
tgtatagcaa ataggaatta ttaacttgag cataagatat gagatacatg aacctgaact 4620
attaaaataa aatattatat ttaaccctag tttaagaaga agtcaatatg cttatttaaa 4680
tattatggat ggtgggcaga tcacttgagg tcaggagttc gagaccagcc tggccaacat 4740
ggcaaaacca catctctact aaaaataaaa aaattagctg ggtgtggtgg tgcactcctg 4800
taatcccagc tactcagaag gctgaggtac aagaattgct ggaacctggg aggcggaggt 4860
tgcagtgaac caagattgca ccactgcact ccagccgggg tgcagagtg agactccgac 4920
tgaaaataaa taaataaata aataaataaa aatattatgg atggtgaagg 4980
gaatggtata gaattggaga gattatctta ctgaacacct gtagtcccag ctttctctgg 5040
aagtggtggt atttgagcag gatgtgcaca aggcaattga aatgcccata attagtttct 5100
cagctttgaa tacactataa actcagtggc tgaaggagga aattttagaa ggaagctact 5160
aaaagatcta atttgaaaaa ctacaaaagc attaactaaa aaagtttatt ttccttttgt 5220
ctgggcagta gtgaaaataa ctactcacaa cattcactat gtttgcaagg aattaacaca 5280
aataaaagat gccttttttac ttaaacgcca agacagaaaa cttgcccaat actgagaagc 5340
aacttgcatt agagagggaa ctgttaaatg ttttcaaccc agttcatctg gtggatgttt 5400
ttgcaggtta ctctgagaat tttgcttatg aaaaatcatt attttttagtg tagttcacaa 5460
taatgtattg aacatacttc taatcaaagg tgctatgtcc ttgtgtatgg tactaaatgt 5520
gtcctgtgta cttttgcaca actgagaatc ctgcggcttg gtttaatgag tgtgttcatg 5580
aaataaataa tggaggaatt gtcaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 5640
aaaaaaaaaa aaaaaaaaaa aaaaaaaa                                    5668
```

<210> 2
<211> 3639
<212> DNA
<213> Homo sapiens

<400> 2
```
gattacgcaa gctatttagg tgacactata gaatwctcag cttgcatcaa gcttggtacc 60
gagctcggat ccctagtaac ggccgccagt gtgctggaat tcgcccttgc agccgggctc 120
agcatgagga acagaaggaa tgacactctg gacagcaccc ggaccctgta ctccagcgcg 180
tctcggagca cagacttgtc ttacagtgaa agcgacttgg tgaattttat tcaagcaaat 240
tttaagaaac gagaatgtgt cttctttacc aaagattcca aggccacgga gaatgtgtgc 300
```

```
aagtgtggct atgcccagag ccagcacatg gaaggcaccc agatcaacca aagtgagaaa 360
tggaactaca agaaacacac caaggaattt cctaccgacg cctttgggga tattcagttt 420
gagacactgg ggaagaaagg gaagtatata cgtctgtcct gcgacacgga cgcggaaatc 480
ctttacgagc tgctgaccca gcactggcac ctgaaaacac ccaacctggt catttctgtg 540
accggggggcg ccaagaactt cgccctgaag ccgcgcatgc gcaagatctt cagccggctc 600
atctacatcg cgcagtccaa aggtgcttgg attctcacgg gaggcaccca ttatggcctg 660
atgaagtaca tcggggaggt ggtgagagat aacaccatca gcaggagttc agaggagaat 720
attgtggcca ttggcatagc agcttggggc atggtctcca accgggacac cctcatcagg 780
aattgcgatg ctgagggcta ttttttagcc cagtacctta tggatgactt cacaagagat 840
ccactgtata tcctggacaa caaccacaca catttgctgc tcgtggacaa tggctgtcat 900
ggacatccca ctgtcgaagc aaagctccgg aatcagctag agaagtatat ctctgagcgc 960
actattcaag attccaacta tggtggcaag atccccattg tgtgttttgc ccaaggaggt 1020
ggaaaagaga ctttgaaagc catcaatacc tccatcaaaa ataaaattcc ttgtgtggtg 1080
gtggaaggct cgggccagat cgctgatgtg atcgctagcc tggtggaggt ggaggatgcc 1140
ctgacatctt ctgccgtcaa ggagaagctg gtgcgctttt taccccgcac ggtgtcccgg 1200
ctgcctgagg aggagactga gagttggatc aaatggctca agagaaattct cgaatgttct 1260
cacctattaa cagttattaa aatggaagaa gctggggatg aaattgtgag caatgccatc 1320
tcctacgctc tatacaaagc cttcagcacc agtgagcaag acaaggataa ctggaatggg 1380
cagctgaagc ttctgctgga gtggaaccag ctggacttag ccaatgatga gattttcacc 1440
aatgaccgcc gatgggagtc tgctgacctt caagaagtca tgtttacggc tctcataaag 1500
gacagaccca gtttgtccg cctctttctg gagaatggct tgaacctacg gaagtttctc 1560
acccatgatg tcctcactga actcttctcc aaccacttca gcacgcttgt gtaccggaat 1620
ctgcagatcg ccaagaattc ctataatgat gccctcctca cgtttgtctg gaaactggtt 1680
gcgaacttcc gaagaggctt ccggaaggaa gacagaaatg gccgggacga gatggacata 1740
gaactccacg acgtgtctcc tattactcgg cacccctgc aagctctctt catctgggcc 1800
attcttcaga ataagaagga actctccaaa gtcatttggg agcagaccag gggctgcact 1860
ctggcagccc tgggagccag caagcttctg aagactctgg ccaaagtgaa gaacgacatc 1920
aatgctgctg gggagtccga ggagctggct aatgagtacg agacccgggc tgttgagctg 1980
ttcactgagt gttacagcag cgatgaagac ttggcagaac agctgctggt ctattcctgt 2040
gaagcttggg gtggaagcaa ctgtctggag ctggcggtgg aggccacaga ccagcatttc 2100
atcgcccagc ctggggtcca gaatttttct tctaagcaat ggtatggaga gatttcccga 2160
gacaccaaga actggaagat tatcctgtgt ctgtttatta taccttggt gggctgtggc 2220
tttgtatcat ttaggaagaa acctgtcgac aagcacaaga agctgctttg gtactatgtg 2280
gcgttcttca cctccccctt cgtggtcttc tcctggaatg tggtcttcta catcgccttc 2340
ctcctgctgt ttgcctacgt gctgctcatg gatttccatt cggtgccaca cccccccgag 2400
ctggtcctgt actcgctggt ctttgtcctc ttctgtgatg aagtgagaca gtggtacgta 2460
aatggggtga attattttac tgacctgtgg aatgtgatgg acacgctggg gctttttttac 2520
ttcatagcag gaattgtatt tcggctccac tcttctaata aaagctcttt gtattctgga 2580
cgagtcattt tctgtctgga ctacattatt ttcactctaa gattgatcca cattttttact 2640
gtaagcagaa acttaggacc caagattata atgctgcaga ggatgctgat cgatgtgttc 2700
ttcttcctgt tcctcttgc ggwgtggatg gtggcctttg gcgtggccag gcaagggatc 2760
cttaggcaga atgagcagcg ctggaggtgg atattccgtt cggtcatcta cgagccctac 2820
ctggccatgt tcggccaggt gcccagtgac gtggatggta ccacgtatga ctttgcccac 2880
tgcaccttca ctgggaatga gtccaagcca ctgtgtgtgg agctggatga gcacaacctg 2940
ccccggttcc ccgagtggat caccatcccc ctggtgtgca tctacatgtt atccaccaac 3000
atcctgctgg tcaacctgct ggtcgccatg tttggctaca cggtgggcac cgtccaggag 3060
aacaatgacc aggtctggaa gttccagagg tacttcctgg tgcaggagta ctgcagccgc 3120
ctcaatatcc ccttcccctt catcgtcttc gcttacttct acatggtggt gaagaagtgc 3180
ttcaagtgtt gctgcaagga gaaaaacatg gagtcttctg tctgctgttt caaaaatgaa 3240
gacaatgaga ctctggcatg ggaggggtgtc atgaaggaaa actaccttgt caagatcaac 3300
acaaaagcca acgacacctc agaggaaatg aggcatcgat ttagacaact ggatacaaag 3360
cttaatgatc tcaagggtct tctgaaagag attgctaata aaatcaaata aaactgtatg 3420
aactctaatg gagaaaaatc taattatagc aagatcatat taggaatgc tgatgaacaa 3480
ttttgctatc gactactaaa tgagagattt tcagacccct gggtacatgg tggatgattt 3540
taaatcaccc tagtgtgctg agaccttgag aataaagtgt gaagggcgaa ttctgcagat 3600
atccatcaca ctggcggccg ctcgagcatg catctagag 3639
```

```
<210> 3
<211> 3042
<212> DNA
<213> Homo sapiens

<400> 3
atggttggag gatgcaggtg gacagaagac gtggagcctg cagaagtaaa ggaaaagatg 60
tcctttcggg cagccaggct cagcatgagg aacagaagga atgacactct ggacagcacc 120
cggaccctgt actccagcgc gtctcggagc acagacttgt cttacagtga aagcgacttg 180
gtgaatttta ttcaagcaaa ttttaagaaa cgagaatgtg tcttctttac caaagattcc 240
```

```
aaggccacgg agaatgtgtg caagtgtggc tatgcccaga gccagcacat ggaaggcacc 300
cagatcaacc aaagtgagaa atggaactac aagaaacaca ccaaggaatt tcctaccgac 360
gcctttgggg atattcagtt tgagacactg gggaagaaag ggaagtatat acgtctgtcc 420
tgcgacacgg acgcggaaat cctttacgag ctgctgaccc agcactggca cctgaaaaca 480
cccaacctgg tcatttctgt gaccggggggc gccaagaact tcgccctgaa gccgcgcatg 540
cgcaagatct tcagccggct catctacatc gcgcagtcca aaggtgcttg gattctcacg 600
ggaggcaccc attatggcct gatgaagtac ctcggggagg tggtgagaga taacaccatc 660
agcaggagtt cagaggagaa tattgtggcc attggcatag cagcttgggg catggtctcc 720
aaccgggaca ccctcatcag gaattgcgat gctgagggct attttttagc ccagtacctt 780
atggatgact tcacaagaga tccactgtat atcctggaca acaaccacac acatttgctg 840
ctcgtggaca atggctgtca tggacatccc actgtcgaag caaagctccg gaatcagcta 900
gagaagtata tctctgagcg cactattcaa gattccaact atggtggcaa gatccccatt 960
gtgtgttttg cccaaggagg tggaaaagag actttgaaag ccatcaatac ctccatcaaa 1020
aataaaattc cttgtgtggt ggtggaaggc tcgggccaga tcgctgatgt gatcgctagc 1080
ctggtggagg tggaggatgc cctgacatct tctgccgtca aggagaagct ggtgcgcttt 1140
ttaccccgca cggtgtcccg gctgcctgag gaggagactg agagttggat caaatggctc 1200
aaagaaattc tcgaatgttc tcacctatta acagttatta aaatggaaga agctggggat 1260
gaaattgtga gcaatgccat ctcctacgct ctatacaaag cctccagcac cagtgagcaa 1320
gacaaggata actggaatgg gcagctgaag cttctgctgg agtggaacca gctggactta 1380
gccaatgatg agattttcac caatgaccgc cgatgggaga gagcaaacc gaggctcaga 1440
gacacaataa tccaggtcac atggctggaa aatggtagaa tcaaggttga gagcaaagat 1500
gtgactgacg gcaaagcctc ttctcatatg ctggtggttc tcaagtctgc tgaccttcaa 1560
gaagtcatgt ttacggctct cataaaggac agacccaagt ttgtccgcct ctttctggag 1620
aatggcttga acctacggaa gtttctcacc catgatgtcc tcactgaact cttctccaac 1680
cacttcagca cgcttgtgta ccggaatctg cagatcgcca agaattccta taatgatgcc 1740
ctcctcacgt ttgtctggaa actggttgcg aacttccgaa gaggcttccg gaaggaagac 1800
agaaatggcc gggacagagat ggacatagaa ctccacgacg tgtctcctat tactcggcac 1860
cccctgcaag ctctcttcat ctgggccatt cttcagaata agaaggaact ctccaaagtc 1920
atttgggagc agaccagggg ctgcactctg gcagccctgg gagccagcaa gcttctgaag 1980
actctggcca aagtgaagaa cgacatcaat gctgctgggg agtccgagga gctggctaat 2040
gagtacctga cccgggctgt tggtgagtcc acagtgtgga atgctgtggt gggcgcggat 2100
ctgccatgtg gcacagacat tgccagcggc actcatagac cagatggtgg agagctgttc 2160
actgagtgtt acagcagcga tgaagacttg gcagaacagc tgctggtcta ttcctgtgaa 2220
gcttggggtg gaagcaactg tctggagctg gcggtggagg ccacagacca gcatttcatc 2280
gcccagccctg gggtccagaa ttttctttct aagcaatggt atggagagat ttccccgagac 2340
accaagaact ggaagattat cctgtgtctg tttattatac ccttggtggg ctgtggcttt 2400
gtatcatttta ggaagaaacc tgtcgacaag cacaagaagc tgctttggta ctatgtggcg 2460
ttcttcacct ccccccttcgt ggtcttctcc tggaatgtgg tcttctacat cgccttcctc 2520
ctgctgtttg cctacgtgct gctcatggat ttccattcgg tgccacaccc ccccgagctg 2580
gtcctgtact cgctggtctt tgtcctcttc tgtgatgaag tgagacaggg ccggccggct 2640
gctcccagtg cggggcccgc caagcccacg cccacccgga actccatctg gcccgcaagc 2700
tccacacgca gcccccggttc ccgctcacgc cactccttcc acacttccct gcaagctgag 2760
ggtgccagct ctggccttgg ccagcccaga aaggggctcc cacagtgcag cggtgggctg 2820
aagggctcct caagtgccgc caaagtggga gcccaggcag aggaggtgcc gagagcaagc 2880
gagggctgtg aggactgcca gcacgctgtc acctctcaga agcgtaagac agcaatggac 2940
caaacagacg aagatctctt cccctatgga gcattctacc agttcctgat gatttccagg 3000
agctttcgag gagaggagat gagcatcggc aagcagcact aa 3042
```

```
<210> 4
<211> 3039
<212> DNA
<213> Homo sapiens

<400> 4
atggttggag gatgcaggtg gacagaagac gtggagcctg cagaagtaaa ggaaaagatg 60
tcctttcggg cagccaggct cagcatgagg aacagaagga atgacactct ggacagcacc 120
cggaccctgt actccagcgc gtctcggagc acagacttgt cttacagtga aagcgacttg 180
gtgaatttta ttcaagcaaa ttttaagaaa cgagaatgtg tcttctttac caaagattcc 240
aaggccacgg agaatgtgtg caagtgtggc tatgcccaga gccagcacat ggaaggcacc 300
cagatcaacc aaagtgagaa atggaactac aagaaacaca ccaaggaatt tcctaccgac 360
gcctttgggg atattcagtt tgagacactg gggaagaaag ggaagtatat acgtctgtcc 420
tgcgacacgg acgcggaaat cctttacgag ctgctgaccc agcactggca cctgaaaaca 480
cccaacctgg tcatttctgt gaccggggggc gccaagaact tcgccctgaa gccgcgcatg 540
cgcaagatct tcagccggct catctacatc gcgcagtcca aaggtgcttg gattctcacg 600
ggaggcaccc attatggcct gatgaagtac ctcggggagg tggtgagaga taacaccatc 660
agcaggagtt cagaggagaa tattgtggcc attggcatag cagcttgggg catggtctcc 720
aaccgggaca ccctcatcag gaattgcgat gctgagggct attttttagc ccagtacctt 780
```

```
atggatgact tcacaagaga tccactgtat atcctggaca acaaccacac acatttgctg 840
ctcgtggaca atggctgtca tggacatccc actgtggaag caaagctccg gaatcagcta 900
gagaagtata tctctgagcg cactattcaa gattccaact atggtggcaa gatccccatt 960
gtgtgttttg cccaaggagg tggaaaagag actttgaaag ccatcaatac ctccatcaaa 1020
aataaaattc cttgtgtggt ggtggaaggc tcgggccaga tcgctgatgt gatcgctagc 1080
ctggtggagg tggaggatgc cctgacatct tctgccgtca aggagaagct ggtgcgcttt 1140
ttaccccgca cggtgtcccg gctgcctgag gaggagactg agagttggat caaatggctc 1200
aaagaaattc tcgaatgttc tcacctatta acagttatta aatggaaga agctggggat 1260
gaaattgtga gcaatgccat ctcctacgct ctatacaaag ccttcagcac cagtgagcaa 1320
gacaaggata actggaatgg gcagctgaag cttctgctgg agtggaacca gctggactta 1380
gccaatgatg agattttcac caatgaccgc cgatgggaga agagcaaacc gaggctcaga 1440
gacacaataa tccaggtcac atggctggaa aatggtagaa tcaaggttga gagcaaagat 1500
gtgactgacg gcaaagcctc ttctcatatg ctggtggttc tcaagtctgc tgaccttcaa 1560
gaagtcatgt ttacggctct cataaaggac agacccaagt ttgtccgcct ctttctggag 1620
aatggcttga acctacggaa gtttctcacc catgatgtcc tcactgaact cttctccaac 1680
cacttcagca cgcttgtgta ccggaatctg cagatcgcca agaattccta taatgatgcc 1740
ctcctcacgt ttgtctggaa actggttgcg aacttccgaa gaggcttccg gaaggaagac 1800
agaaatggcc gggacgagat ggacatagaa ctccacgacg tgtctcctat tactcggcac 1860
cccctgcaag ctctcttcat ctgggccatt cttcagaata gaaggaact ctccaaagtc 1920
atttgggagc agaccagggg ctgcactctg gcagccctgg gagccagcaa gcttctgaag 1980
actctggcca aagtgaagaa cgacatcaat gctgctgggg agtccgagga gctggctaat 2040
gagtacctga cccgggctgt tggtgagtcc acagtgtgga atgctgtggt gggcgcggat 2100
ctgccatgtg gcacagacat tgccagcggc actcatagac cagatggtgg agagctgttc 2160
actgagtgtt acagcagcga tgaagacttg gcagaacagc tgctggtcta ttcctgtgaa 2220
gcttggggtg gaagcaactg tctggagctg gcggtggagg ccacagacag gcatttcatc 2280
gcccagcctg gggtccagaa ttttctttct aagcaatggc atggagagat ttcccgagac 2340
accaagaact ggaagattat cctgtgtctg tttattatac ccttggtggg ctgtggcttt 2400
gtatcatttta ggaagaaacc tgtcgacaag cacaagaagc tgctttggta ctatgtggcg 2460
ttcttcacct ccccccttcgt ggtcttctcc tggaatgtgg tcttctacat cgccttcctc 2520
ctgctgtttg cctacgtgct gctcatggat ttccattcgg tgccacaccc ccccgagctg 2580
gtcctgtact cgctggtctt tgtcctcttc tgtgatgaag tgagacaggg ccggccggct 2640
gctcccagtg cggggccccg caagcccacg cccacccgga actccatctg gcccgcaagc 2700
tccacacgca gccccggttc ccgctcacgc cactccttcc acacttccct gcaagctgag 2760
ggtgccagct ctggccttgg ccagcccaga aaggggctcc cacagtgcag cggtgggctg 2820
aagggctcct caagtgccgc caaagtggga gcccaggcag aggaggtgcc gagagcaagc 2880
gagggctgtg aggactgcca gcacgctgtc acctctcaga agcgtaagac agcaatggac 2940
caaacagacg aagatctctt cccctatgga gcattctacc agttcctgat gatttccagg 3000
agctttcgag gagaggagat gagcatcggc aagcagcac                         3039
```

<210> 5
<211> 3893
<212> DNA
<213> Homo sapiens

<400> 5
```
attaaagttt ataaaacagt ggctggatgg ttggaggatg caggtggaca gaagacgtgg 60
agcctgcaga agtaaaggaa aagatgtcct ttcgggcagc caggctcagc atgaggaaca 120
gaaggaatga cactctggac agcacccgga ccctgtactc cagcgcgtct cggagcacag 180
acttgtctta cagtgaaagc gccagcttct acgctgcctt caggacacag acgtgcccaa 240
tcatggcttc ttgggacttg gtgaattta ttcaagcaaa ttttaagaaa cgagaatgtg 300
tcttctttac caaagattcc aaggccacgg agaatgtgtg caagtgtggc tatgcccaga 360
gccagcacat ggaaggcacc cagatcaacc aaagtgagaa atggaactac aagaaacaca 420
ccaaggaatt tcctaccgac gcctttgggg atattcagtt tgagcactg gggaagaaag 480
ggaagtatat acgtctgtcc tgcgacacgg acgcgaaaat cctttacgag ctgctgaccc 540
agcactggca cctgaaaaca cccaacctg tcatttctgt gaccggggc gccaagaact 600
tcgccctgaa gccgcgcatg cgcaagatct tcagccggct catctacatc gcgcagtcca 660
aaggtgcttg gattctcacg ggaggcaccc attatggcct gatgaagtac atcggggagg 720
tggtgagaga taacaccatc agcaggagtt cagaggagaa tattgtggcc attggcatag 780
cagcttgggg catggtctcc aaccgggaca ccctcatcag gaattgcgat gctgagggct 840
atttttagc ccagtacctt atggatgact tcacaagaga tccactgtat atcctggaca 900
acaaccacac acatttgctg ctcgtggaca atggctgtca tggacatccc actgtcgaag 960
caaagctccg gaatcagcta gagaagtata tctctgagcg cactattcaa gattccaact 1020
atggtggcaa gatccccatt gtgtgttttg cccaaggagg tggaaaagag actttgaaag 1080
ccatcaatac ctccatcaaa aataaaattc cttgtgtggt ggtggaaggc tcgggccaga 1140
tcgctgatgt gatcgctagc ctggtggagg tggaggatgc cctgacatct tctgccgtca 1200
aggagaagct ggtgcgcttt ttaccccgca cggtgtcccg gctgcctgag gaggagactg 1260
agagttggat caaatggctc aaagaaattc tcgaatgttc tcacctatta acagttatta 1320
```

```
aaatggaaga agctgggggat gaaattgtga gcaatgccat ctcctacgct ctatacaaag 1380
ccttcagcac cagtgagcaa gacaaggata actggaatgg gcagctgaag cttctgctgg 1440
agtggaacca gctggactta gccaatgatg agattttcac caatgaccgc cgatgggaga 1500
agagcaaacc gaggctcaga gacacaataa tccaggtcac atggctggaa aatggtagaa 1560
tcaaggttga gagcaaagat gtgactgacg gcaaagcctc ttctcatatg ctggtggttc 1620
tcaagtctgc tgaccttcaa gaagtcatgt ttacggctct cataaaggac agacccaagt 1680
ttgtccgcct ctttctggag aatggcttga acctacggaa gtttctcacc catgatgtcc 1740
tcactgaact cttctccaac cacttcagca cgcttgtgta ccggaatctg cagatcgcca 1800
agaattccta taatgatgcc ctcctcacgt ttgtctggaa actggttgcg aacttccgaa 1860
gaggcttccg gaaggaagac agaaatggcc gggacgagat ggacatagaa ctccacgacg 1920
tgtctcctat tactcggcac cccctgcaag ctctcttcat ctgggccatt cttcagaata 1980
agaaggaact ctccaaagtc atttgggagc agaccagggg ctgcactctg gcagccctgg 2040
gagccagcaa gcttctgaag actctggcca aagtgaagaa cgacatcaat gctgctgggg 2100
agtccgagga gctggctaat gagtacgaga cccgggctgt tggtgagtcc acagtgtgga 2160
atgctgtggt gggcgcggat ctgccatgtg gcacagacat tgccagcggc actcatagac 2220
cagatggtgg agagctgttc actgagtgtt acagcagcga tgaagacttg gcagaacagc 2280
tgctggtcta ttcctgtgaa gcttgggggtg gaagcaactg tctggagctg gcggtggagg 2340
ccacagacca gcatttcatc gcccagcctg gggtccagaa ttttctttct aagcaatggt 2400
atggagagat ttcccgagac accaagaact ggaagattat cctgtgtctg tttattatac 2460
ccttggtggg ctgtggcttt gtatcatttа ggaagaaacc tgtcgacaag cacaagaagc 2520
tgctttggta ctatgtggcg ttcttcacct cccccttcgt ggtcttctcc tggaatgtgg 2580
tcttctacat cgccttcctc ctgctgtttg cctacgtgct gctcatggat ttccattcgg 2640
tgccacaccc ccccgagctg gtcctgtact cgctggtctt tgtcctcttc tgtgatgaag 2700
tgagacaggg ccggccggct gctcccagtg cggggcccgc caagcccacg cccacccgga 2760
actccatctg gcccgcaagc tccacacgca gccccggttc ccgctcacgc cactccttcc 2820
acacttccct gcaagctgag ggtgccagct ctggccttgg ccagcccaga aaggggtgga 2880
catttaaaaa tctggaaatg gttgatattt ccaagctgct gatgtccctc tctgtccctt 2940
tctgtacgca gtggtacgta aatgggggtga attattttac tgacctgtgg aatgtgatgg 3000
acacgctggg gcttttttac ttcatagcag gaattgtatt tcggcaaggg atccttaggc 3060
agaatgagca gcgctggagg tggatattcc gttcggtcat ctacgagccc tacctggcca 3120
tgttcggcca ggtgcccagt gacgtggatg gtaccacgta tgactttgcc cactgcacct 3180
tcactgggaa tgagtccaag ccactgtgtg tggagctgga tgagcacaac ctgccccggt 3240
tccccgagtg gatcaccatc cccctggtgt gcatctacat gttatccacc aacatcctgc 3300
tggtcaacct gctggtcgcc atgtttggct acacggtgga caggttcaag gagaacaatg 3360
accaggtctg gaagttccag aggtacttcc tggtgcagga gtactgcagc cgcctcaata 3420
tccccttccc cttcatcgtc ttcgcttact tctacatggt ggtgaagaag tgcttcaagt 3480
gttgctgcaa ggagaaaaac atggagtctt ctgtctgctg tgagtggttt atccatgtgt 3540
acttgggatc agaagcagcg attaatttca gggaaggatg cctgcatcca gtgattggaa 3600
gctggacccc aggctggctg gtctggacat ccacacgcat tctcacatgc agtgccggct 3660
ggccagcagc agggagtctc agtgtcacca cacatagcag ctgggttcct gcaaaaagca 3720
gcaagtcaca ggcccaccca gacagaacgg gtagagaatg tgactctgct tctgggtggg 3780
aaggacagcc tgcccggtgg gtggaagaat ccgtggccct gtttggccat cgtggccctg 3840
tttggccacc taccactcta ggcatcactg agctgaatgc gccggtcctc tga        3893
```

```
<210> 6
<211> 4646
<212> DNA
<213> Homo sapiens

<400> 6
tcgacccacg cgtccgccca cgcgtccgcc cacgcgtccg cccacgcgtc cgcccacgcg 60
tccgcccacg cgtccggggt gaaagmramy cmygcktsms aaaaaccgtc acttaggaaa 120
agatgtcctt tcgggcagcc aggctcagca tgaggaacag aaggaatgac actctggaca 180
gcacccggac cctgtactcc agcgcgtctc ggagcacaga cttgtcttac agtgaaagcg 240
acttggtgaa ttttattcaa gcaaatttta agaaacgaga atgtgtcttc tttaccaaag 300
attccaaggc cacggagaat gtgtgcaagt gtgcgtatgc ccagagccag cacatggaag 360
gcacccagat caaccaaagt gagaaatgga actacaagaa acacaccaag gaatttccta 420
ccgacgcctt tggggatatt cagtttgaga cactggggaa gaaagggaag tatatacgtc 480
tgtcctgcga cacggacgcg gaaatccttt acgagctgct gacccagcac tggcacctga 540
aaacacccaa cctggtcatt tctgtgaccg ggggcgccaa gaacttcgcc ctgaagccgc 600
gcatgcgcaa gatcttcagc cggctcatct acatcgcgca gtccaaaggt gcttggattc 660
tcacgggagg cacccattat ggcctgatga agtacatcgg ggaggtggtg agagataaca 720
ccatcagcag gagttcagag gagaatattg tggccattgg catagcagct ggggcatgg 780
tctccaaccg ggacaatggc atcaggaatt gcgatgccga gggctatttt ttagcccagt 840
accttatgga tgacttcaca agagatccac tgtgtatcct ggacaacaac cacacacatt 900
tgctgctcgt ggacaatggc tgtcatggac atcccactgt cgaagcaaag ctccggaatc 960
agctagagaa gtatatctct gagcgcacta ttcaagattc caactatggt ggcaagatcc 1020
```

- 7 -

```
ccattgtgtg ttttgcccaa ggaggtggaa aagagacttt gaaagccatc aatacctcca 1080
tcaaaaataa aattccttgt gtggtggtgg aaggctcggg ccagatcgct gatgtgatcg 1140
ctagcctggt ggaggtggag gatgccctga catcttctgc cgtcaaggag aagctggtgc 1200
gcttttacc ccgcacggtg tcccggctgc ctgaggagga gactgagagt tggatcaaat 1260
ggctcaaaga aattctcgaa tgttctcacc tattaacagt tattaaaatg gaagaagctg 1320
gggatgaaat tgtgagcaat gccatctcct acgctctata caaagccttc agcaccagtg 1380
agcaagacaa ggataactgg aatgggcagc tgaagcttct gctggagtgg aaccagctgg 1440
acttagccaa tgatgagatt ttcaccaatg accgccgatg ggagtctgct gaccttcaag 1500
aagtcatgtt tacggctctc ataaaggaca gacccaagtt tgtccgcctc tttctggaga 1560
atggcttgaa cctacggaag tttctcaccc atgatgtcct cactgaactc ttctccaacc 1620
acttcagcac gcttgtgtac cggaatctgc agatcgccaa gaattcctat aatgatgccc 1680
tcctcacgtt tgtctggaaa ctggttgcga acttccgaag aggcttccgg aaggaagaca 1740
gaaatggccg ggacgagatg gacatagaac tccacgacgt gtctcctatt actcggcacc 1800
ccctgcaagc tctcttcatc tgggccattc ttcagaataa gaaggaactc tccaaagtca 1860
tttgggagca gaccaggggc tgcactctgg cagccctggg agccagcaag cttctgaaga 1920
ctctggccaa agtgaagaac gacatcaatg ctgctgggga gtccgaggag ctggctaatg 1980
agtacgagac ccgggctgtt gagctgttca ctgagtgtta cagcagcgat gaagacttgg 2040
cagaacagct gctggtctat tcctgtgaag cttggggtgg aagcaactgt ctggagctgg 2100
cggtggaggc cacagaccag catttcatcg cccagcctgg ggtccagaat tttctttcta 2160
agcaatggta tggagagatt tcccgagaca ccaagaactg gaagattatc ctgtgtctgt 2220
ttattatacc cttggtgggc tgtggctttg tatcattag gaagaaacct gtcgacaagc 2280
acaagaagct gctttggtac tatgtggcgt tcttcacctc ccccttcgtg gtcttctcct 2340
ggaatgtggt cttctacatc gccttcctcc tgctgtttgc ctacgtgctg ctcatggatt 2400
tccattcggt gccacacccc cccgagctgg tcctgtactc gctggtcttt gtcctcttct 2460
gtgatgaagt gagacagtgg tacgtaaatg gggtgaatta tttactgac ctgtggaatg 2520
tgatggacac gctggggcctt ttttacttca tagcaggaat tgtatttcgg ctccactctt 2580
ctaataaaag ctctttgtat tctggacgag tcattttctg tctggactac attattttca 2640
ctctaagatt gatccacatt tttactgtaa gcagaaactt aggacccaag attataatgc 2700
tgcagaggat gctgatcgat gtgttcttct tcctgttcct ctttgcggtg tggatggtgg 2760
cctttggcgt ggccaggcaa gggatcctta ggcagaatga gcagcgctgg aggtggatat 2820
tccgttcggt catctacgag ccctacctgg ccatgttcgg ccaggtgccc agtgacgtgg 2880
atggtaccac gtatgacttt gcccactgca ccttcactgg gaatgagtcc aagccactgt 2940
gtgtggagct ggatgacgac aacctgcccc ggttccccga gtggatcacc atcccctgg 3000
tgtgcatcta catgttatcc accaacatcc tgctggtcaa cctgctggtc gccatgtttg 3060
gctacacggt gggcaccgtc caggagaaca atgaccaggt ctggaagttc cagaggtact 3120
tcctggtgca ggagtactgc agccgcctca atatcccctt ccccttcatc gtcttcgctt 3180
acttctacat ggtggtgaag aagtgcttca gtgttgctg caaggagaaa aacatggagt 3240
cttctgtctg ctgtttcaaa aatgaagaca atgagactct ggcatgggag ggtgtcatga 3300
aggaaaacta ccttgtcaag atcaacacaa aagccaacga cacctcagag gaaatgaggc 3360
atcgatttag acaactggat acaaagctta atgatccaa gggtcttctg aaagagattg 3420
ctaataaaat caaataaaac tgtatgaact ctaatggaga aaaatctaat tatagcaaga 3480
tcatattaag gaatgctgat gaacaatttt gctatcgact actaaatgag agattttcag 3540
accCctgggt acatggtgga tgattttaaa tcaccctagt gtgctgagac cttgagaata 3600
aagtgtgtga ttggtttcat acttgaagac ggatataaag gaagaatatt tcctttatgt 3660
gtttctccag aatggtgcct gtttctctct gtgtctcaat gcctgggact ggaggttgat 3720
agtttaagtg tgttcttacc gcctcctttt tcctttaatc ttattttttga tgaacacata 3780
tataggagaa catctatcct atgaataaga acctggtcat gctttactcc tgtattgtta 3840
ttttgttcat ttccaattga ttctctactt ttcccttttt tgtattatgt gactaattag 3900
ttggcatatt gtwaaaagtc tctcaaatta ggccagattc taaaacatgc tgcagcaaga 3960
ggaccccgct ctcttcagga aaagtgtttt catttctcag gatgcttctt acctgtcaga 4020
ggaggtgaca aggcagtctc ttgctctctt ggactcacca ggctcctatt gaaggaacca 4080
cccccattcc taaatatgtg aaaagtcgcc caaaatgcaa ccttgaaagg cactactgac 4140
tttgttctta ttggatactc ctcttattta ttatttttcc attaaaaata atagctggct 4200
attatagaaa atttagacca tacagagatg tagaaagaac ataaattgtc cccattacct 4260
taaggtaatc actgctaaca atttctggat ggtttttcaa gtctattttt tttctatgta 4320
tgtctcaatt ctctttcaaa attttacaga atgttatcat actacatata tactttttat 4380
gtaagctttt tcacttagta ttttatcaaa tatgttttta ttatattcat agccttctta 4440
aacattatat caataattgc ataataggca acctctagcg attaccataa ttttgctcat 4500
tgaaggctat ctccagttga tcattgggat gagcatcttt gtgcatgaat cctattgctg 4560
tatttgggaa aattttccaa ggttagattc caataaatat ctatttatta ttaaaaaaaa 4620
aaaaaaagg gcggccgctc tagagt                                      4646
```

<400> 7
```
gattacgcaa gctatttagg tgacactata gaatwctcag cttgcatcaa gcttggtacc 60
gagctcggat ccctagtaac ggccgccagt gtgctggaat tcgcccttgc agccgggctc 120
agcatgagga acagaaggaa tgacactctg gacagcaccc ggaccctgta ctccagcgcg 180
tctcggagca cagacttgtc ttacagtgaa agcgacttgg tgaattttat tcaagcaaat 240
tttaagaaac gagaatgtgt cttctttacc aaagattcca aggccacgga gaatgtgtgc 300
aagtgtggct atgcccagag ccagcacatg gaaggcaccc agatcaacca aagtgagaaa 360
tggaactaca agaaacacac caaggaattt cctaccgacg cctttgggga tattcagttt 420
gagacactgg ggaagaaagg gaagtatata cgtctgtcct gcgacacgga cgcggaaatc 480
ctttacgagc tgctgaccca gcactggcac ctgaaaacac ccaacctggt catttctgtg 540
accggggggcg ccaagaactt cgccctgaag ccgcgcatgc gcaagatctt cagccggctc 600
atctacatcg cgcagtccaa aggtgcttgg attctcacgg gaggcaccca ttatggcctg 660
atgaagtaca tcggggaggt ggtgagagat aacaccatca gcaggagttc agaggagaat 720
attgtggcca ttggcataqc agcttggggc atggtctcca accgggacac cctcatcagg 780
aattgcgatg ctgagggcta ttttttagcc cagtacctta tggatgactt cacaagagat 840
ccactgtata tcctggacaa caaccacaca catttgctgc tcgtggacaa tggctgtcat 900
ggacatccca ctgtcgaagc aaagctccgg aatcagctag agaagtatat ctctgagcgc 960
actattcaag attccaacta tggtggcaag atccccattg tgtgttttgc ccaaggaggt 1020
ggaaaagaga ctttgaaagc catcaatacc tccatcaaaa ataaaattcc ttgtgtggtg 1080
gtoqaaggct cggggccagat cgctgatgtg atcgctagcc tggtggaggt ggaggatgcc 1140
ctgacatctt ctgccgtcaa ggagaagctg gtgcgctttt taccccgcac ggtgtcccgg 1200
ctgcctgagg aggagactga gagttggatc aaatggctca agaaaattct cgaatgttct 1260
cacctattaa cagttattaa aatggaagaa gctggggatg aaattgtgag caatgccatc 1320
tcctacgctc tatacaaagc cttcagcacc agtgagcaag acaaggataa ctggaatggg 1380
cagctgaagc ttctgctgga gtggaaccag ctggacttag ccaatgatga gattttcacc 1440
aatgaccgcc gatgggagtc tgctgacctt caagaagtca tgtttacggc tctcataaag 1500
gacagaccca agtttgtccg cctctttctg gagaatggct tgaacctacg gaagtttctc 1560
acccatgatg tcctcactga actcttctcc aaccacttca gcacgcttgt gtaccggaat 1620
ctgcagatcg ccaagaattc ctataatgat gccctcctca cgtttgtctg gaaactggtt 1680
gcgaacttcc gaagaggctt ccggaaggaa gacagaaatg gccgggacga gatggacata 1740
gaactccacg acgtgtctcc tattactcgg caccccctgc aagctctctt catctgggcc 1800
attcttcaga ataagaagga actctccaaa gtcatttggg agcagaccag gggctgcact 1860
ctggcagccc tgggagccag caagcttctg aagactctgg ccaaagtgaa gaacgacatc 1920
aatgctgctg gggagtccga ggagctggct aatgagtacg agacccgggc tgttgagctg 1980
ttcactgagt gttacacgca g cgatgaagac ttggcagaac agctgctggt ctattcctgt 2040
gaagcttggg gtggaagcaa ctgtctggag ctggcggtgg aggccacaga ccagcatttc 2100
atcgcccagc ctggggtcca gaatttttctt tctaagcaat ggtatggaga gatttcccga 2160
gacaccaaga actggaagat tatcctgtgt ctgtttatta tacccttggt gggctgtggc 2220
tttgtatcat ttaggaagaa acctgtcgac aagcacaaga agctgctttg gtactatgtg 2280
gcgttcttca cctcccccctt cgtggtcttc tcctggaatg tggtcttcta catcgccttc 2340
ctcctgctgt ttgcctacgt gctgctcatg gatttccatt cggtgccaca ccccccccgag 2400
ctggtcctgt actcgctggt ctttgtcctc ttctgtgatg aagtgagaca gtggtacgta 2460
aatggggtga attattttac tgacctgtgg aatgtagtga acacgctggg gctttttttac 2520
ttcatagcag gaattgtatt tcggctccac tcttctaata aaagctcttt gtattctgga 2580
cgagtcattt tctgtctgga ctacattatt ttcactctaa gattgatcca cattttttact 2640
gtaagcagaa acttaggacc caagattata atgctgcaga ggatgctgat cgatgtgttc 2700
ttcttcctgt tcctctttgc ggwgtggatg gtggcctttg gcgtggccag gcaagggatc 2760
cttaggcaga atgagcagcg ctggaggtgg atattccgtt cggtcatcta cgagccctac 2820
ctggccatgt tcggccaggt gcccagtgac gtggatggta ccacgtatga cttttgcccac 2880
tgcaccttca ctgggaatga gtccaagcca ctgtgtgtgg agctggatga gcacaacctg 2940
cccccggttcc ccgagtggat caccaccccc ctggtgtgca tctacatgtt atccaccaac 3000
atcctgctgg tcaacctgct ggtcgccatg tttggctaca cggtgggcac cgtccaggag 3060
aacaatgacc aggtctggaa gttccagagg tacttcctgg tgcaggagta ctgcagccgc 3120
ctcaatatcc ccttcccctt catcgtcttc gcttacttct acatggtggt gaagaagtgc 3180
ttcaagtgtt gctgcaagga gaaaaacatg gagtcttctg tctgctgttt caaaaatgaa 3240
gacaatgaga ctctggcatg ggaggggtgtc atgaaggaaa actaccttgt caagatcaac 3300
acaaagcca acgacacctc agaggaaatg aggcatcgat ttagacaact ggatacaaag 3360
cttaatgatc tcaaggggtct tctgaaaagag attgctaata aaatcaaata aaactgtatg 3420
aactctaatg gagaaaaatc taattatagc aagatcatat taaggaatgc tgatgaacaa 3480
ttttgctatc gactactaaa tgagagattt tcagacccct gggtacatgg tggatgatttt 3540
taaatcaccc tagtgtgctg agaccttgag aataaagtgt gaaggggcgaa ttctgcagat 3600
atccatcaca ctggcggccg ctcgagcatg catctagag 3639
```

<210> 8
<211> 3101
<212> DNA
<213> Homo sapiens

```
<400> 8
atggttggag gatgcaggtg gacagaagac gtggagcctg cagaagtaaa ggaaaagatg 60
tcctttcggg cagccaggct cagcatgagg aacagaagga atgacactct ggacagcacc 120
cggaccctgt actccagcgc gtctcggagc acagacttgt cttacagtga aagcgccagc 180
ttctacgctg ccttcaggac acagacgtgc ccaatcatgg cttcttggga cttggtgaat 240
tttattcaag caaattttaa gaaacgagaa tgtgtcttct ttaccaaaga ttccaaggcc 300
acggagaatg tgtgcaagtg tggctatgcc cagagccagc acatggaagg cacccagatc 360
aaccaaagtg agaaatggaa ctacaagaaa cacaccaagg aatttcctac cgacgccttt 420
gggatattc agtttgagac actggggaag aaagggaagt atatacgtct gtcctgcgac 480
acggacgcgg aaatccttta cgagctgctg acccagcact ggcacctgaa aacacccaac 540
ctggtcattt ctgtgaccgg gggcgccaag aacttcgccc tgaagccgcg catgcgcaag 600
atcttcagcc ggctcatcta catcgcgcag tccaaaggtg cttggattct cacgggaggc 660
acccattatg gcctgatgaa gtacatcggg gaggtggtga gagataacac catcagcagg 720
agttcagagg agaatattgt ggccattggc atagcagctt ggggcatggt ctccaaccgg 780
gacaccctca tcaggaattg cgatgctgag ggctattttt tagcccagta ccttatggat 840
gacttcacaa gagatccact gtatatcctg gacaacaacc acacacattt gctgctcgtg 900
gacaatggct gtcatggaca tcccactgtc gaagcaaagc tccggaatca gctagagaag 960
tatatctctg agcgcactat tcaagattcc aactatggtg gcaagatccc cattgtgtgt 1020
tttgcccaag gaggtggaaa agagactttg aaagccatca atacctccat caaaaataaa 1080
attccttgtg tggtggtgga aggctcgggc cagatcgctg a?gtgatcgc tagcctggtg 1140
gaggtggagg atgccctgac atcttctgcc gtcaaggaga agctggtgcg cttttttaccc 1200
cgcacggtgt cccggctgcc tgaggaggag actgagagtt ggatcaaatg gctcaaagaa 1260
attctcgaat gttctcacct attaacagtt attaaaatgg aagaagctgg ggatgaaatt 1320
gtgagcaatg ccatctccta cgctctatac aaagccttca gcaccagtga gcaagacaag 1380
gataactgga atgggcagct gaagcttctg ctggagtgga accagctgga cttagccaat 1440
gatgagattt tcaccaatga ccgccgatgg gagaagagca aaccgaggct cagagacaca 1500
ataatccagg tcacatggct ggaaaatggt agaatcaagg ttgagagcaa agatgtgact 1560
gacggcaaag cctcttctca tatgctggtg gttctcaagt ctgctgacct tcaagaagtc 1620
atgtttacgg ctctcataaa ggacagaccc aagtttgtcc gcctctttct ggagaatggc 1680
ttgaacctac ggaagtttct cacccatgat gtcctcactg aactcttctc caaccacttc 1740
agcacgcttg tgtaccggaa tctgcagatc gccaagaatt cctataatga tgccctcctc 1800
acgtttgtct ggaaactggt tgcgaacttc cgaagaggct tccggaagga agacagaaat 1860
ggccgggacg agatggacat agaactccac gacgtgtctc ctattactcg gcacccccctg 1920
caagctctct tcatctgggc cattcttcag aataagaagg aactctccaa agtcatttgg 1980
gagcagacca ggggctgcac tctggcagcc ctgggagcca gcaagcttct gaagactctg 2040
gccaaagtga agaacgacat caatgctgct ggggagtccg aggagctggc taatgagtac 2100
gagacccggg ctgttggtga gtccacagtg tggaatgctg tggtgggcgc ggatctgcca 2160
tgtggcacag acattgccag cggcactcat agaccagatg gtggagagc gttcactgag 2220
tgttacagca gcgatgaaga cttggcagaa cagctgctgg tctattcctg tgaagcttgg 2280
ggtggaagca actgtctgga gctgcggtg gaggccacac accagcattt catcgcccag 2340
cctggggtcc agaattttct ttctaagcaa tggtatggag agatttcccg agacaccaag 2400
aactggaaga ttatcctgtg tctgtttatt ataccttgg tgggctgtgg ctttgtatca 2460
tttaggaaga aacctgtcga caagcacaag aagctgcttt ggtactatgt ggcgttcttc 2520
acctccccct tcgtggtctt ctcctggaat gtggtcttct acatcgcctt cctcctgctg 2580
tttgcctacg tgctgctcat ggatttccat tcggtgccac accccccga gctggtcctg 2640
tactcgctgg tcttttgtcct cttctgtgat gaagtgagac agtgggccgg cctgctcccc 2700
agtgcggggc ccgccaagcc cacgccaccc tcggaactcca tctggccgc aagctccaca 2760
cgcagcccg gttcccgctc acgccactcc ttccacactt ccctgcaagc tgagggtgcc 2820
agctctggcc ttggccagcc cagaaagggg ctcccacagt gcagcggtgg gctgaagggg 2880
ctcctcaagt gcggccaaag tgggagccca ggcagaggac gcgcccagag tgagcgaggg 2940
ctgtgaggac tgccagcaag cacgctgtca cctctcagaa gcgtaagaca gcaatggacc 3000
aaacagacga agatctcttc ccctatggag cattctacca gttcctgatg atttccagga 3060
gctttcgagg agaggagatg agcatcggca agcagcacta a                        3101
```

```
<210> 9
<211> 930
<212> DNA
<213> Homo sapiens

<400> 9
ggcacgaggc tgcctttctc caccagagac tcttcctcag gaggacttg gtgaatttta 60
ttcaagcaaa ttttaagaaa cgagaatgtg tcttctttac caaagattcc aaggccacgc 120
tcaatgaaat ccttccttcc tgtccacacc atcgtgctta tcaggagaa tgtgtgcaag 180
tgtggctatg cccagagcca gcacatggaa ggcacccaga tcaaccaaag tgagaaatgg 240
aactacaaga aacacaccaa ggaatttcct accgacgcct ttgggatat tcagtttgag 300
acactgggga agaaagggaa gtatatacgt ctgtcctgcg acacggacgc ggaaatcctt 360
```

```
tacgagctgc tgacccagca ctggcacctg aaaacaccca acctggtcat ttctgtgacc 420
gggggcgcca agaacttcgc cctgaagccg cgcatgcgca agatcttcag ccggctcatc 480
tacatccgc agtccaaagg tgcttggatt ctcacgggag gcacccatta tggcctgatg 540
aagtacatcg gggaggtggt gagagataac accatcagca ggagttcaga ggagaatatt 600
gtggccattg gcatagcagc ttggggcatg gtctccaacc gggacaccct catcaggaat 660
tgcgatgctg aggtaccggt gggacaggag gaggtctgct aggtcacatg gaagaaagac 720
catggcatgg gcctgtggcc tgaaccctgg ggctctgtga tggagccagc cagatcatgg 780
ggaagtctgc ctttcaagga gtgcctttgg gaccttaaag gaattgaaaa caaggatgac 840
gtacctaatt aactgctggg aaagagttaa caatgaatgt tttgttcatt aaaatgtgtt 900
ctcagcaatc tcaaaaaaaa aaaaaaaaa                                   930
```

```
<210> 10
<211> 3288
<212> DNA
<213> Homo sapiens
```

```
<400> 10
atgaggaaca gaaggaatga cactctggac agcacccgga ccctgtactc cagcgcgtct 60
cggagcacag acttgtctta cagtgaaagc gacttggtga attttattca agcaaatttt 120
aagaaacgag aatgtgtctt ctttaccaaa gattccaagg ccacggagaa tgtgtgcaag 180
tgtggctatg cccagagcca gcacatggaa ggcacccaga tcaaccaaag tgagaaatgg 240
aactacaaga aacacaccaa ggaatttcct accgacgcct tggggatat tcagtttgag 300
acactgggga agaaagggaa gtatatacgt ctgtcctgcg acacggacgc ggaaatcctt 360
tacgagctgc tgacccagca ctggcacctg aaaacaccca acctggtcat ttctgtgacc 420
gggggcgcca agaacttcgc cctgaagccg cgcatgcgca agatcttcag ccggctcatc 480
tacatccgc agtccaaagg tgcttggatt ctcacgggag gcacccatta tggcctgatg 540
aagtacatcg gggaggtggt gagagataac accatcagca ggagttcaga ggagaatatt 600
gtggccattg gcatagcagc ttggggcatg gtctccaacc gggacaccct catcaggaat 660
tgcgatgctg agggctattt tttagcccag taccttatgg atgacttcac aagagatcca 720
ctctatatcc tggacaacaa ccacacacat ttgctgctcg tggacaatgg ctgtcatgga 780
catcccactg tcgaagcaaa gctccggaat cagctagaga agtatatctc tgagcgcact 840
attcaagatt ccaactatgg tggcaagatc cccattgtgt gtttttgccca aggaggtgga 900
aaagagactt tgaaagccat caatacctcc atcaaaaata aaattccttg tgtggtggtg 960
gaaggctcgg gccagatcgc tgatgtgatc gctagcctgg tggaggtgga ggatgccctg 1020
acatcttctg ccgtcaagga gaagctggtg cgctttttac cccgcacggt gtccggctg 1080
cctgaggagg agactgagag ttggatcaaa tggctcaaag aaattctcga atgttctcac 1140
ctattaacag ttattaaaat ggaagaagct ggggatgaaa ttgtgagcaa tgccatctcc 1200
tacgctctat acaaagcctt cagcaccagt gagcaagaca aggataactg gaatgggcag 1260
ctgaagcttc tgctggagtg gaaccagctg gacttagcca atgatgagat tttcaccaat 1320
gaccgccgat gggagtctgc tgaccttcaa gaagtcatgt ttacggctct cataaaggac 1380
agacccaagt ttgtccgcct ctttctggag aatggcttga acctacggaa gtttctcacc 1440
catgatgtcc tcactgaact cttctccaac cacttcagca cgcttgtgta ccggaatctg 1500
cagatcgcca agaattccta taatgatgcc ctcctcacgt ttgtctggaa actggttgcg 1560
aacttccgaa gaggcttccg gaaggaagac agaaatggcc gggacgagat ggacatagaa 1620
ctccacgacg tgtctcctat tactcggcac ccccctgcaag ctctcttcat ctgggccatt 1680
cttcagaata agaaggaact ctccaaagtc atttgggagc agaccagggg ctgcactctg 1740
gcagccctgg gagccagcaa gcttctgaag actctggcca aagtgaagaa cgacatcaat 1800
gctgctgggg agtccgagga gctggctaat gagtacagaa cccgggctgt tgagctgttc 1860
actgagtgtt acagcagcga tgaagacttg gcagaacagc tgctggtcta ttcctgtgaa 1920
gcttggggtg gaagcaactg tctggagctg gcggtggagg ccacagacca gcatttcatc 1980
gcccagcctg gggtccagaa ttttctttct aagcaatggt atggagagat ttccccgagac 2040
accaagaacc ggaagattat cctgtgtctg tttattatac ccttggtggg ctgtggcttt 2100
gtatcattta ggaagaaacc tgtcgacaag cacaagaagc tgctttggta ctatgtggcg 2160
ttcttcacct cccccttcgt ggtcttctcc tggaatgtgg tcttctacat cgccttcctc 2220
ctgctgtttg cctacgtgct gctcatggat ttccattcgg tgccacaccc ccccgagctg 2280
gtcctgtact cgctcgtctt tgtcctcttc tgtgatgaag tgagacagtg gtacgtaaat 2340
ggggtgaatt attttactga cctgtggaat gtgatggaca cgctggggct tttttacttc 2400
atagcaggaa ttgtatttcg gctccactct tctaataaaa gctctttgta ttctggacga 2460
gtcatttttct gtctggacta cattatttc actctaagat tgatccacat ttttactgta 2520
agcagaaact taggacccaa gattataatg ctgcagagga tgctgatcga tgtgttcttc 2580
ttcctgttcc tctttgcggt gtggatggtg gcctttggcg tggccaggca agggatcctt 2640
aggcagaatg agcagcgctg gaggtggata ttccgttcgg tcatctacga gccctacctg 2700
gccatgttcg gccaggtgcc cagtgacgtg gatggtacca cgtatgactt tgcccactgc 2760
accttcactg ggaatgagtc caagccactg tgtgtggagc tggatgagca caacctgccc 2820
cggttccccg agtggatcac catcccctg gtgtgcatct acatgttatc caccaacatc 2880
ctgctggtca acctgctggt cgccatgttt ggctacacgg tgggcaccgt ccaggagaac 2940
aatgaccagg tctggaagtt ccagaggtac ttcctggtgc aggagtactg cagccgcctc 3000
```

```
aatatcccct tccccttcat cgtcttcgct tacttctaca tggtggtgaa gaagtgcttc 3060
aagtgttgct gcaaggagaa aaacatggag tcttctgtct gctgtttcaa aaatgaagac 3120
aatgagactc tggcatggga gggtgtcatg aaggaaaact accttgtcaa gatcaacaca 3180
aaagccaacg acacctcaga ggaaatgagg catcgattta gacaactgga tacaaagctt 3240
aatgatctca agggtcttct gaaagagatt gctaataaaa tcaaataa            3288
```

```
<210> 11
<211> 5674
<212> DNA
<213> Homo sapiens

<400> 11
aagaaaatcc tgcttgacaa aaaccgtcac ttaggaaaag atgtcctttc gggcagccag 60
gctcagcatg aggaacagaa ggaatgacac tctggacagc acccggaccc tgtactccag 120
cgcgtctcgg agcacagact tgtcttacag tgaaagcgac ttggtgaatt ttattcaagc 180
aaattttaag aaacgagaat gtgtcttctt tatcaaagat tccaaggcca cggagaatgt 240
gtgcaagtgt ggctatgccc agagccagca catggaaggc acccagatca accaaagtga 300
gaaatggaac tacaagaaac acaccaagga atttcctacc gacgcctttg gggatattca 360
gtttgagaca ctggggaaga aaggaagta tatacgtctg tcctgcgaca cggacgcgga 420
aatcctttac gagctgctga cccagcactg gcacctgaaa acaccaadcc tggtcatttc 480
tgtgaccggg ggcgccaaga acttcgccct gaagccgcgc atgcgcaaga tcttcagccg 540
gctcatctac atcgcgcagt ccaaaggtgc ttggattctc acgggaggca cccattatgg 600
cctgatgaag tacatcgggg aggtggtgag agataaacacc atcagcagga gttcagagga 660
gaatattgtg gccattggca tagcagcttg gggcatggtc tccaaccggg acaccctcat 720
caggaattgc gatgctgagg ctattttttt agcccagtac cttatggatg acttcacaag 780
agatccactg tatatcctgg acaacaacca cacacatttg ctgctcgtgg acaatggctg 840
tcatggacat cccactgtcg aagcaaagct ccggaatcag ctagagaagt atatctctga 900
gcgcactatt caagattcca actatggtgg caagatcccc attgtgtgtt ttgcccaagg 960
aggtggaaaa gagactttga aagccatcaa tacctccatc aaaaataaaa ttccttgtgt 1020
ggtggtggaa ggctcgggcc agatcgctga tgtgatcgct agcctggtgg aggtggagga 1080
tgccctgaca tcttctgccg tcaaggagaa gctggtgcgc ttttttacccc gcacggtgtc 1140
ccggctgcct gaggaggaga ctgagagttg gatcaaatgg ctcaaagaaa ttctcgaatg 1200
ttctcaccta ttaacagtta ttaaaatgga agaagctggg gatgaaattg tgagcaatgc 1260
catctcctac gctctataca aagccttcag caccagtgag caagacaagg ataactggaa 1320
tgggcagctg aagcttctgc tggagtggaa ccagctggac ttagccaatg atgagatttt 1380
caccaatgac cgccgatggg agtctgctga ccttcaagaa gtcatgttta cggctctcat 1440
aaaggacaga cccaagtttg tccgcctctt tctggagaat ggcttgaacc tacggaagtt 1500
tctcaccat gatgtcctca ctgaactctt ctccaaccac ttcagcacgc ttgtgtaccg 1560
gaatctgcag atcgccaaga attcctataa tgatgccctc ctcacgtttg tctggaaact 1620
ggttgcgaac ttccgaagag gcttccggaa ggaagacaga aatggccggg acgagatgga 1680
catagaactc cacgacgtgt ctcctattac tcggcacccc ctgcaagctc tcttcatctg 1740
ggccattctt cagaataaga aggaactctc caaagtcatt tgggagcaga ccaggggctg 1800
cactctggca gccctgggag ccagcaagct tctgaagact ctggccaaag tgaagaacga 1860
catcaatgct gctggggagt ccgaggagct ggctaatgag tacgagaccc gggctgttga 1920
gctgttcact gagtgttaca gcagcgatga agacttggca gaacagctgc tggtctattc 1980
ctgtgaagct tggggtggaa gcaactgtct ggagctggcg gtggaggcca cagaccagca 2040
tttcatcgcc cagcctgggg tccagaattt tctttctaag caatggtatg agagatttc 2100
ccgagacacc aagaactgga agattatcct gtgtctgttt attataccct tggtgggctg 2160
tggctttgta tcatttagga agaaacctgt cgacaagcac aagaagctgc tttggtacta 2220
tgtggcgttc ttcacctccc ccttcgtggt cttctcctgg aatgtggtct ctacatcgc 2280
cttcctcctg ctgtttgcct acgtgctgct catggatttc cattcggtgc cacacccccc 2340
cgagctggtc ctgtactcgc tggtctttgt cctcttctgt gatgaagtga gacagtggta 2400
cgtaaatggg gtgaattatt ttactgacct gtggaatgtg atggacacgc tggggctttt 2460
ttacttcata gcaggaattg tatttcggct ccactcttct aataaaagct ctttgtattc 2520
tggacgagtc atttttctgtc tggactacat tattttcact ctaagattga tccacatttt 2580
tactgtaagc agaaacttag gacccaagat tataatgctg cagaggatgc tgatcgatgt 2640
gttcttcttc ctgttcctct ttgcggtgtg gatggtggcc tttggcgtgg ccaggcaagg 2700
gatccttagg cagaatgagc agcgctggag gtggatattc cgttcggtca tctacgagcc 2760
ctacctggcc atgttcggcc aggtgcccag tgacgtggat ggtaccacgt atgactttgc 2820
ccactgcacc ttcactggga atgagtccaa gccactgtgt gtggagccag atgagcacaa 2880
cctgcccccgg ttccccgagt ggatcaccat cccccctggtg tgcatctaca tgttatccac 2940
caacatcctg ctggtcaacc tgctggtcgc catgtttggc tacacggtgg gcaccgtcca 3000
ggagaacaat gaccaggtct ggaagttcca gaggtacttc ctggtgcagg agtactgcag 3060
ccgcctcaat atccccttcc ccttcatcgt cttcgcttac ttctacatgg tggtgaagaa 3120
gtgcttcaag tgttgctgca aggagaaaaa catggagtct tctgtctgct gtttcaaaaa 3180
tgaagacaat gagactctgg catgggaggg tgtcatgaag gaaaactacc ttgtcaagat 3240
caacacaaaa gccaacgaca cctcagagga aatgaggcat cgatttagac aactggatac 3300
```

```
aaagcttaat gatctcaagg gtcttctgaa agagattgct aataaaatca aataaaatca 3360
aataaaactg tatgaaactc taatggagaa aaatctaatt atagcaagat catattaagg 3420
aatgctgatg aacaattttg ctatcgacta ctaaatgaga gattttcaga cccctgggta 3480
catggtggat gattttaaat caccctagtg tgctgagacc ttgagaataa agtgtgtgat 3540
tggtttcata cttgaagacg gatataaagg aagaatattt cctttatgtg tttctccaga 3600
atggtgcctg tttctctctg tgtctcaatg cctgggactg gaggttgata gtttaagtgt 3660
gttcttaccg cctccttttt cctttaatct tattttgat gaacacatat ataggagaac 3720
atctatccta tgaataagaa cctggtcatg ctttactcct gtattgttat tttgttcatt 3780
tccaattgat tctctacttt tccctttttt gtattatgtg actaattagt tggcatattg 3840
ttaaaagtct ctcaaattag gccagattct aaaacatgct gcagcaagag gaccccgctc 3900
tcttcaggaa aagtgttttc atttctcagg atgcttctta cctgtcagag gaggtgacaa 3960
ggcagtctct tgctctcttg gactcaccag gctcctattg aaggaaccac ccccattcct 4020
aaatatgtga aaagtcgccc aaaatgcaac cttgaaaggc actactgact ttgttcttat 4080
tggatactcc tcttatttat tattttcca ttaaaaataa tagctggcta ttatagaaaa 4140
tttagaccat acagagatgt agaaagaaca taaattgtcc ccattacctt aaggtaatca 4200
ctgctaacaa tttctggatg gtttttcaag tctatttttt ttctatgtat gtctcaattc 4260
tctttcaaaa ttttacagaa tgttatcata ctacatatat actttttatg taagcttttt 4320
cacttagtat tttatcaaat atgttttat tatattcata gccttcttaa acattatatc 4380
aataattgca taataggcaa cctctagcga ttaccataat tttgctcatt gaaggctatc 4440
tccagttgat cattgggatg agcatctttg tgcatgaatc ctattgctgt atttgggaaa 4500
atttccaag gttagattcc aataaatatc tatttattat taaatattaa aatatcgatt 4560
tattattaaa accatttata aggctttttc ataaatgtat agcaaatagg aattattaac 4620
ttgagcataa gatatgagat acatgaacct gaactattaa aataaaatat tatatttaac 4680
cctagtttaa gaagaagtca atatgcttat ttaaatatta tggatggtgg gcagatcact 4740
tgaggtcagg agttcgagac cagcctggcc aacatggcaa aaccacatct ctactaaaaa 4800
taaaaaaatt agctgggtgt ggtggtgcac tcctgtaatc ccagctactc agaaggctga 4860
ggtacaagaa ttgctggaac ctgggaggcg gaggttgcag tgaaccaaga ttgcaccact 4920
gcactccagc cggggtgaca gagtgagact ccgactgaaa ataaataaat aaataaataa 4980
ataaataaat aaataaatat tatggatggt gaaggaatg gtatagaatt ggagagatta 5040
tcttactgaa cacctgtagt cccagctttc tctggaagtg gtggtatttg agcaggatgt 5100
gcacaaggca attgaaatgc ccataattag tttctcagct ttgaatacac tataaactca 5160
gtggctgaag gaggaaattt tagaaggaag ctactaaaag atctaatttg aaaaactaca 5220
aaagcattaa ctaaaaaagt ttattttcct tttgtctggg cagtagtgaa aataactact 5280
cacaacattc actatgtttg caaggaatta acacaaataa aagatgcctt tttacttaaa 5340
cgccaagaca gaaaacttgc ccaatactga gaagcaactt gcattagaga gggaactgtt 5400
aaatgttttc aacccagttc atctggtgga tgttttgca ggttactctg agaattttgc 5460
ttatgaaaaa tcattatttt tagtgtagtt cacaataatg tattgaacat acttctaatc 5520
aaaggtgcta tgtccttgtg tatggtacta aatgtgtcct gtgtactttt gcacaactga 5580
gaatcctgcg gcttggttta atgagtgtgt tcatgaaata aataatggag gaattgtcaa 5640
aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaa                            5674
```

```
<210> 12
<211> 1095
<212> PRT
<213> Homo sapiens

<400> 12
Met Arg Asn Arg Arg Asn Asp Thr Leu Asp Ser Thr Arg Thr Leu Tyr
 1               5                  10                  15

Ser Ser Ala Ser Arg Ser Thr Asp Leu Ser Tyr Ser Glu Ser Asp Leu
            20                  25                  30

Val Asn Phe Ile Gln Ala Asn Phe Lys Lys Arg Glu Cys Val Phe Phe
        35                  40                  45

Thr Lys Asp Ser Lys Ala Thr Glu Asn Val Cys Lys Cys Gly Tyr Ala
    50                  55                  60

Gln Ser Gln His Met Glu Gly Thr Gln Ile Asn Gln Ser Glu Lys Trp
65                  70                  75                  80

Asn Tyr Lys Lys His Thr Lys Glu Phe Pro Thr Asp Ala Phe Gly Asp
                85                  90                  95

Ile Gln Phe Glu Thr Leu Gly Lys Lys Gly Lys Tyr Ile Arg Leu Ser
            100                 105                 110
```

```
Cys Asp Thr Asp Ala Glu Ile Leu Tyr Glu Leu Leu Thr Gln His Trp
        115             120             125

His Leu Lys Thr Pro Asn Leu Val Ile Ser Val Thr Gly Gly Ala Lys
    130             135             140

Asn Phe Ala Leu Lys Pro Arg Met Arg Lys Ile Phe Ser Arg Leu Ile
145             150             155             160

Tyr Ile Ala Gln Ser Lys Gly Ala Trp Ile Leu Thr Gly Gly Thr His
                165             170             175

Tyr Gly Leu Met Lys Tyr Ile Gly Glu Val Val Arg Asp Asn Thr Ile
            180             185             190

Ser Arg Ser Ser Glu Glu Asn Ile Val Ala Ile Gly Ile Ala Ala Trp
        195             200             205

Gly Met Val Ser Asn Arg Asp Thr Leu Ile Arg Asn Cys Asp Ala Glu
    210             215             220

Gly Tyr Phe Leu Ala Gln Tyr Leu Met Asp Asp Phe Thr Arg Asp Pro
225             230             235             240

Leu Tyr Ile Leu Asp Asn Asn His Thr His Leu Leu Leu Val Asp Asn
            245             250             255

Gly Cys His Gly His Pro Thr Val Glu Ala Lys Leu Arg Asn Gln Leu
        260             265             270

Glu Lys Tyr Ile Ser Glu Arg Thr Ile Gln Asp Ser Asn Tyr Gly Gly
    275             280             285

Lys Ile Pro Ile Val Cys Phe Ala Gln Gly Gly Gly Lys Glu Thr Leu
    290             295             300

Lys Ala Ile Asn Thr Ser Ile Lys Asn Lys Ile Pro Cys Val Val Val
305             310             315             320

Glu Gly Ser Gly Gln Ile Ala Asp Val Ile Ala Ser Leu Val Glu Val
            325             330             335

Glu Asp Ala Leu Thr Ser Ser Ala Val Lys Glu Lys Leu Val Arg Phe
        340             345             350

Leu Pro Arg Thr Val Ser Arg Leu Pro Glu Glu Glu Thr Glu Ser Trp
        355             360             365

Ile Lys Trp Leu Lys Glu Ile Leu Glu Cys Ser His Leu Leu Thr Val
    370             375             380

Ile Lys Met Glu Glu Ala Gly Asp Glu Ile Val Ser Asn Ala Ile Ser
385             390             395             400

Tyr Ala Leu Tyr Lys Ala Phe Ser Thr Ser Glu Gln Asp Lys Asp Asn
            405             410             415

Trp Asn Gly Gln Leu Lys Leu Leu Leu Glu Trp Asn Gln Leu Asp Leu
            420             425             430

Ala Asn Asp Glu Ile Phe Thr Asn Asp Arg Arg Trp Glu Ser Ala Asp
        435             440             445

Leu Gln Glu Val Met Phe Thr Ala Leu Ile Lys Asp Arg Pro Lys Phe
    450             455             460
```

- 14 -

```
Val Arg Leu Phe Leu Glu Asn Gly Leu Asn Leu Arg Lys Phe Leu Thr
465               470               475               480

His Asp Val Leu Thr Glu Leu Phe Ser Asn His Phe Ser Thr Leu Val
              485               490               495

Tyr Arg Asn Leu Gln Ile Ala Lys Asn Ser Tyr Asn Asp Ala Leu Leu
         500               505               510

Thr Phe Val Trp Lys Leu Val Ala Asn Phe Arg Arg Gly Phe Arg Lys
         515               520               525

Glu Asp Arg Asn Gly Arg Asp Glu Met Asp Ile Glu Leu His Asp Val
         530               535               540

Ser Pro Ile Thr Arg His Pro Leu Gln Ala Leu Phe Ile Trp Ala Ile
545               550               555               560

Leu Gln Asn Lys Lys Glu Leu Ser Lys Val Ile Trp Glu Gln Thr Arg
              565               570               575

Gly Cys Thr Leu Ala Ala Leu Gly Ala Ser Lys Leu Leu Lys Thr Leu
         580               585               590

Ala Lys Val Lys Asn Asp Ile Asn Ala Ala Gly Glu Ser Glu Glu Leu
         595               600               605

Ala Asn Glu Tyr Glu Thr Arg Ala Val Glu Leu Phe Thr Glu Cys Tyr
    610               615               620

Ser Ser Asp Glu Asp Leu Ala Glu Gln Leu Leu Val Tyr Ser Cys Glu
625               630               635               640

Ala Trp Gly Gly Ser Asn Cys Leu Glu Leu Ala Val Glu Ala Thr Asp
              645               650               655

Gln His Phe Ile Ala Gln Pro Gly Val Gln Asn Phe Leu Ser Lys Gln
              660               665               670

Trp Tyr Gly Glu Ile Ser Arg Asp Thr Lys Asn Arg Lys Ile Ile Leu
         675               680               685

Cys Leu Phe Ile Ile Pro Leu Val Gly Cys Gly Phe Val Ser Phe Arg
    690               695               700

Lys Lys Pro Val Asp Lys His Lys Lys Leu Leu Trp Tyr Tyr Val Ala
705               710               715               720

Phe Phe Thr Ser Pro Phe Val Val Phe Ser Trp Asn Val Val Phe Tyr
              725               730               735

Ile Ala Phe Leu Leu Leu Phe Ala Tyr Val Leu Leu Met Asp Phe His
         740               745               750

Ser Val Pro His Pro Pro Glu Leu Val Leu Tyr Ser Leu Val Phe Val
         755               760               765

Leu Phe Cys Asp Glu Val Arg Gln Trp Tyr Val Asn Gly Val Asn Tyr
    770               775               780

Phe Thr Asp Leu Trp Asn Val Met Asp Thr Leu Gly Leu Phe Tyr Phe
785               790               795               800

Ile Ala Gly Ile Val Phe Arg Leu His Ser Ser Asn Lys Ser Ser Leu
         805               810               815

Tyr Ser Gly Arg Val Ile Phe Cys Leu Asp Tyr Ile Ile Phe Thr Leu
         820               825               830
```

```
Arg Leu Ile His Ile Phe Thr Val Ser Arg Asn Leu Gly Pro Lys Ile
        835           840           845

Ile Met Leu Gln Arg Met Leu Ile Asp Val Phe Phe Phe Leu Phe Leu
    850           855           860

Phe Ala Val Trp Met Val Ala Phe Gly Val Ala Arg Gln Gly Ile Leu
865           870           875           880

Arg Gln Asn Glu Gln Arg Trp Arg Trp Ile Phe Arg Ser Val Ile Tyr
            885           890           895

Glu Pro Tyr Leu Ala Met Phe Gly Gln Val Pro Ser Asp Val Asp Gly
        900           905           910

Thr Thr Tyr Asp Phe Ala His Cys Thr Phe Thr Gly Asn Glu Ser Lys
        915           920           925

Pro Leu Cys Val Glu Leu Asp Glu His Asn Leu Pro Arg Phe Pro Glu
    930           935           940

Trp Ile Thr Ile Pro Leu Val Cys Ile Tyr Met Leu Ser Thr Asn Ile
945           950           955           960

Leu Leu Val Asn Leu Leu Val Ala Met Phe Gly Tyr Thr Val Gly Thr
            965           970           975

Val Gln Glu Asn Asn Asp Gln Val Trp Lys Phe Gln Arg Tyr Phe Leu
            980           985           990

Val Gln Glu Tyr Cys Ser Arg Leu Asn Ile Pro Phe Pro Phe Ile Val
        995           1000           1005

Phe Ala Tyr Phe Tyr Met Val Val Lys Lys Cys Phe Lys Cys Cys Cys
    1010           1015           1020

Lys Glu Lys Asn Met Glu Ser Ser Val Cys Cys Phe Lys Asn Glu Asp
    1025           1030           1035           1040

Asn Glu Thr Leu Ala Trp Glu Gly Val Met Lys Glu Asn Tyr Leu Val
            1045           1050           1055

Lys Ile Asn Thr Lys Ala Asn Asp Thr Ser Glu Glu Met Arg His Arg
            1060           1065           1070

Phe Arg Gln Leu Asp Thr Lys Leu Asn Asp Leu Lys Gly Leu Leu Lys
    1075           1080           1085

Glu Ile Ala Asn Lys Ile Lys
    1090           1095
```

```
<210> 13
<211> 1104
<212> PRT
<213> Homo sapiens
```

```
<400> 13
Met Ser Phe Arg Ala Ala Arg Leu Ser Met Arg Asn Arg Arg Asn Asp
  1           5           10           15

Thr Leu Asp Ser Thr Arg Thr Leu Tyr Ser Ser Ala Ser Arg Ser Thr
        20           25           30

Asp Leu Ser Tyr Ser Glu Ser Asp Leu Val Asn Phe Ile Gln Ala Asn
        35           40           45
```

```
Phe Lys Lys Arg Glu Cys Val Phe Phe Ile Lys Asp Ser Lys Ala Thr
    50              55                  60

Glu Asn Val Cys Lys Cys Gly Tyr Ala Gln Ser Gln His Met Glu Gly
65              70                  75                      80

Thr Gln Ile Asn Gln Ser Glu Lys Trp Asn Tyr Lys Lys His Thr Lys
                85                  90                  95

Glu Phe Pro Thr Asp Ala Phe Gly Asp Ile Gln Phe Glu Thr Leu Gly
            100                 105             110

Lys Lys Gly Lys Tyr Ile Arg Leu Ser Cys Asp Thr Asp Ala Glu Ile
        115             120             125

Leu Tyr Glu Leu Leu Thr Gln His Trp His Leu Lys Thr Pro Asn Leu
    130             135                 140

Val Ile Ser Val Thr Gly Gly Ala Lys Asn Phe Ala Leu Lys Pro Arg
145             150                 155                 160

Met Arg Lys Ile Phe Ser Arg Leu Ile Tyr Ile Ala Gln Ser Lys Gly
                165             170                 175

Ala Trp Ile Leu Thr Gly Gly Thr His Tyr Gly Leu Met Lys Tyr Ile
            180             185             190

Gly Glu Val Val Arg Asp Asn Thr Ile Ser Arg Ser Ser Glu Glu Asn
        195             200                 205

Ile Val Ala Ile Gly Ile Ala Ala Trp Gly Met Val Ser Asn Arg Asp
    210             215             220

Thr Leu Ile Arg Asn Cys Asp Ala Glu Gly Tyr Phe Leu Ala Gln Tyr
225             230             235                 240

Leu Met Asp Asp Phe Thr Arg Asp Pro Leu Tyr Ile Leu Asp Asn Asn
            245             250             255

His Thr His Leu Leu Leu Val Asp Asn Gly Cys His Gly His Pro Thr
            260             265                 270

Val Glu Ala Lys Leu Arg Asn Gln Leu Glu Lys Tyr Ile Ser Glu Arg
    275             280             285

Thr Ile Gln Asp Ser Asn Tyr Gly Gly Lys Ile Pro Ile Val Cys Phe
    290             295             300

Ala Gln Gly Gly Gly Lys Glu Thr Leu Lys Ala Ile Asn Thr Ser Ile
305             310             315             320

Lys Asn Lys Ile Pro Cys Val Val Val Glu Gly Ser Gly Gln Ile Ala
            325             330             335

Asp Val Ile Ala Ser Leu Val Glu Val Glu Asp Ala Leu Thr Ser Ser
            340             345             350

Ala Val Lys Glu Lys Leu Val Arg Phe Leu Pro Arg Thr Val Ser Arg
        355             360             365

Leu Pro Glu Glu Glu Thr Glu Ser Trp Ile Lys Trp Leu Lys Glu Ile
    370             375             380

Leu Glu Cys Ser His Leu Leu Thr Val Ile Lys Met Glu Glu Ala Gly
385             390             395             400

Asp Glu Ile Val Ser Asn Ala Ile Ser Tyr Ala Leu Tyr Lys Ala Phe
            405             410             415
```

```
Ser Thr Ser Glu Gln Asp Lys Asp Asn Trp Asn Gly Gln Leu Lys Leu
        420             425                 430

Leu Leu Glu Trp Asn Gln Leu Asp Leu Ala Asn Asp Glu Ile Phe Thr
        435             440                 445

Asn Asp Arg Arg Trp Glu Ser Ala Asp Leu Gln Glu Val Met Phe Thr
450             455                 460

Ala Leu Ile Lys Asp Arg Pro Lys Phe Val Arg Leu Phe Leu Glu Asn
465             470             475                 480

Gly Leu Asn Leu Arg Lys Phe Leu Thr His Asp Val Leu Thr Glu Leu
                485             490                 495

Phe Ser Asn His Phe Ser Thr Leu Val Tyr Arg Asn Leu Gln Ile Ala
            500             505                 510

Lys Asn Ser Tyr Asn Asp Ala Leu Leu Thr Phe Val Trp Lys Leu Val
        515             520                 525

Ala Asn Phe Arg Arg Gly Phe Arg Lys Glu Asp Arg Asn Gly Arg Asp
    530             535                 540

Glu Met Asp Ile Glu Leu His Asp Val Ser Pro Ile Thr Arg His Pro
545             550             555                 560

Leu Gln Ala Leu Phe Ile Trp Ala Ile Leu Gln Asn Lys Lys Glu Leu
            565             570                 575

Ser Lys Val Ile Trp Glu Gln Thr Arg Gly Cys Thr Leu Ala Ala Leu
            580             585                 590

Gly Ala Ser Lys Leu Leu Lys Thr Leu Ala Lys Val Lys Asn Asp Ile
    595             600                 605

Asn Ala Ala Gly Glu Ser Glu Glu Leu Ala Asn Glu Tyr Glu Thr Arg
    610             615                 620

Ala Val Glu Leu Phe Thr Glu Cys Tyr Ser Ser Asp Glu Asp Leu Ala
625             630             635                 640

Glu Gln Leu Leu Val Tyr Ser Cys Glu Ala Trp Gly Gly Ser Asn Cys
            645             650                 655

Leu Glu Leu Ala Val Glu Ala Thr Asp Gln His Phe Ile Ala Gln Pro
        660             665                 670

Gly Val Gln Asn Phe Leu Ser Lys Gln Trp Tyr Gly Glu Ile Ser Arg
        675             680                 685

Asp Thr Lys Asn Trp Lys Ile Ile Leu Cys Leu Phe Ile Ile Pro Leu
    690             695                 700

Val Gly Cys Gly Phe Val Ser Phe Arg Lys Lys Pro Val Asp Lys His
705             710             715                 720

Lys Lys Leu Leu Trp Tyr Tyr Val Ala Phe Phe Thr Ser Pro Phe Val
            725             730                 735

Val Phe Ser Trp Asn Val Val Phe Tyr Ile Ala Phe Leu Leu Leu Phe
        740             745                 750

Ala Tyr Val Leu Leu Met Asp Phe His Ser Val Pro His Pro Pro Glu
        755             760             765
```

```
Leu Val Leu Tyr Ser Leu Val Phe Val Leu Phe Cys Asp Glu Val Arg
    770             775         ,           780

Gln Trp Tyr Val Asn Gly Val Asn Tyr Phe Thr Asp Leu Trp Asn Val
785             790             795                     800

Met Asp Thr Leu Gly Leu Phe Tyr Phe Ile Ala Gly Ile Val Phe Arg
                805             810             815

Leu His Ser Ser Asn Lys Ser Ser Leu Tyr Ser Gly Arg Val Ile Phe
                820 ,               825             830

Cys Leu Asp Tyr Ile Ile Phe Thr Leu Arg Leu Ile His Ile Phe Thr
            835             840             845

Val Ser Arg Asn Leu Gly Pro Lys Ile Ile Met Leu Gln Arg Met Leu
    850             855             860

Ile Asp Val Phe Phe Phe Leu Phe Leu Phe Ala Val Trp Met Val Ala
865             870             875             880

Phe Gly Val Ala Arg Gln Gly Ile Leu Arg Gln Asn Glu Gln Arg Trp
                885             890             895

Arg Trp Ile Phe Arg Ser Val Ile Tyr Glu Pro Tyr Leu Ala Met Phe
            900             905             910

Gly Gln Val Pro Ser Asp Val Asp Gly Thr Thr Tyr Asp Phe Ala His
        915             920             925

Cys Thr Phe Thr Gly Asn Glu Ser Lys Pro Leu Cys Val Glu Leu Asp
    930             935             940

Glu His Asn Leu Pro Arg Phe Pro Glu Trp Ile Thr Ile Pro Leu Val
945             950             955                     960

Cys Ile Tyr Met Leu Ser Thr Asn Ile Leu Leu Val Asn Leu Leu Val
            965             970             975

Ala Met Phe Gly Tyr Thr Val Gly Thr Val Gln Glu Asn Asn Asp Gln
            980             985             990

Val Trp Lys Phe Gln Arg Tyr Phe Leu Val Gln Glu Tyr Cys Ser Arg
        995             1000            1005

Leu Asn Ile Pro Phe Pro Phe Ile Val Phe Ala Tyr Phe Tyr Met Val
    1010            1015            1020

Val Lys Lys Cys Phe Lys Cys Cys Cys Lys Glu Lys Asn Met Glu Ser
    1025            1030            1035            1040

Ser Val Cys Cys Phe Lys Asn Glu Asp Asn Glu Thr Leu Ala Trp Glu
                1045            1050            1055

Gly Val Met Lys Glu Asn Tyr Leu Val Lys Ile Asn Thr Lys Ala Asn
            1060            1065            1070

Asp Thr Ser Glu Glu Met Arg His Arg Phe Arg Gln Leu Asp Thr Lys
        1075            1080            1085

Leu Asn Asp Leu Lys Gly Leu Leu Lys Glu Ile Ala Asn Lys Ile Lys
    1090            1095            1100
```

<210> 14
<211> 192
<212> PRT
<213> Homo sapiens

<400> 14
Met Lys Ser Phe Leu Pro Val His Thr Ile Val Leu Ile Arg Glu Asn
 1   5   10   15

Val Cys Lys Cys Gly Tyr Ala Gln Ser Gln His Met Glu Gly Thr Gln
            20   25   30

Ile Asn Gln Ser Glu Lys Trp Asn Tyr Lys Lys His Thr Lys Glu Phe
        35   40   45

Pro Thr Asp Ala Phe Gly Asp Ile Gln Phe Glu Thr Leu Gly Lys Lys
    50   55   60

Gly Lys Tyr Ile Arg Leu Ser Cys Asp Thr Asp Ala Glu Ile Leu Tyr
65   70   75   80

Glu Leu Leu Thr Gln His Trp His Leu Lys Thr Pro Asn Leu Val Ile
                85   90   95

Ser Val Thr Gly Gly Ala Lys Asn Phe Ala Leu Lys Pro Arg Met Arg
            100   105   110

Lys Ile Phe Ser Arg Leu Ile Tyr Ile Ala Gln Ser Lys Gly Ala Trp
        115   120   125

Ile Leu Thr Gly Gly Thr His Tyr Gly Leu Met Lys Tyr Ile Gly Glu
    130   135   140

Val Val Arg Asp Asn Thr Ile Ser Arg Ser Ser Glu Glu Asn Ile Val
145   150   155   160

Ala Ile Gly Ile Ala Ala Trp Gly Met Val Ser Asn Arg Asp Thr Leu
                165   170   175

Ile Arg Asn Cys Asp Ala Glu Val Pro Val Gly Gln Glu Glu Val Cys
            180   185   190

<210> 15
<211> 1095
<212> PRT
<213> Homo sapiens

<400> 15
Met Arg Asn Arg Arg Asn Asp Thr Leu Asp Ser Thr Arg Thr Leu Tyr
 1   5   10   15

Ser Ser Ala Ser Arg Ser Thr Asp Leu Ser Tyr Ser Glu Ser Asp Leu
            20   25   30

Val Asn Phe Ile Gln Ala Asn Phe Lys Lys Arg Glu Cys Val Phe Phe
        35   40   45

Thr Lys Asp Ser Lys Ala Thr Glu Asn Val Cys Lys Cys Gly Tyr Ala
    50   55   60

Gln Ser Gln His Met Glu Gly Thr Gln Ile Asn Gln Ser Glu Lys Trp
65   70   75   80

Asn Tyr Lys Lys His Thr Lys Glu Phe Pro Thr Asp Ala Phe Gly Asp
                85   90   95

Ile Gln Phe Glu Thr Leu Gly Lys Lys Gly Lys Tyr Ile Arg Leu Ser
            100   105   110

Cys Asp Thr Asp Ala Glu Ile Leu Tyr Glu Leu Leu Thr Gln His Trp
        115   120   125

His Leu Lys Thr Pro Asn Leu Val Ile Ser Val Thr Gly Gly Ala Lys
    130   135   140

Asn Phe Ala Leu Lys Pro Arg Met Arg Lys Ile Phe Ser Arg Leu Ile
145   150   155   160

Tyr Ile Ala Gln Ser Lys Gly Ala Trp Ile Leu Thr Gly Gly Thr His
                165   170   175

Tyr Gly Leu Thr Lys Tyr Ile Gly Glu Val Val Arg Asp Asn Thr Ile
            180   185   190

Ser Arg Ser Ser Glu Glu Asn Ile Val Ala Ile Gly Ile Ala Ala Trp
        195   200   205

Gly Met Val Ser Asn Arg Asp Thr Leu Ile Arg Asn Cys Asp Ala Glu
    210   215   220

Gly Tyr Phe Leu Ala Gln Tyr Leu Met Asp Asp Phe Thr Arg Asp Pro
225   230   235   240

Leu Tyr Ile Leu Asp Asn Asn His Thr His Leu Leu Leu Val Asp Asn
            245   250   255

Gly Cys His Gly His Pro Thr Val Glu Ala Lys Leu Arg Asn Gln Leu
        260   265   270

Glu Lys His Ile Ser Glu Arg Thr Ile Gln Asp Ser Asn Tyr Gly Gly
    275   280   285

Lys Ile Pro Ile Val Cys Phe Ala Gln Gly Gly Gly Lys Glu Thr Leu
290   295   300

Lys Ala Ile Asn Thr Ser Ile Lys Asn Lys Ile Pro Cys Val Val Val
305   310   315   320

Glu Gly Ser Gly Arg Ile Ala Asp Val Ile Ala Ser Leu Val Glu Val
            325   330   335

Glu Asp Ala Pro Thr Ser Ser Ala Val Lys Glu Lys Leu Val Arg Phe
        340   345   350

Leu Pro Arg Thr Val Ser Arg Leu Ser Glu Glu Glu Thr Glu Ser Trp
    355   360   365

Ile Lys Trp Leu Lys Glu Ile Leu Glu Cys Ser His Leu Leu Thr Val
    370   375   380

Ile Lys Met Glu Glu Ala Gly Asp Glu Ile Val Ser Asn Ala Ile Ser
385   390   395   400

Tyr Ala Leu Tyr Lys Ala Phe Ser Thr Ser Glu Gln Asp Lys Asp Asn
                405   410   415

Trp Asn Gly Gln Leu Lys Leu Leu Leu Glu Trp Asn Gln Leu Asp Leu
            420   425   430

Ala Asn Asp Glu Ile Phe Thr Asn Asp Arg Arg Trp Glu Ser Ala Asp
    435   440   445

```
Leu Gln Glu Val Met Phe Thr Ala Leu Ile Lys Asp Arg Pro Lys Phe
    450             455             460

Val Arg Leu Phe Leu Glu Asn Gly Leu Asn Leu Arg Lys Phe Leu Thr
465             470             475             480

His Asp Val Leu Thr Glu Leu Phe Ser Asn His Phe Ser Thr Leu Val
                485             490             495

Tyr Arg Asn Leu Gln Ile Ala Lys Asn Ser Tyr Asn Asp Ala Leu Leu
            500             505             510

Thr Phe Val Trp Lys Leu Val Ala Asn Phe Arg Arg Gly Phe Arg Lys
            515             520             525

Glu Asp Arg Asn Gly Arg Asp Glu Met Asp Ile Glu Leu His Asp Val
    530             535             540

Ser Pro Ile Thr Arg His Pro Leu Gln Ala Leu Phe Ile Trp Ala Ile
545             550             555             560

Leu Gln Asn Lys Lys Glu Leu Ser Lys Val Ile Trp Glu Gln Thr Arg
            565             570             575

Gly Cys Thr Leu Ala Ala Leu Gly Ala Ser Lys Leu Leu Lys Thr Leu
            580             585             590

Ala Lys Val Lys Asn Asp Ile Asn Ala Ala Gly Glu Ser Glu Glu Leu
    595             600             605

Ala Asn Glu Tyr Glu Thr Arg Ala Val Glu Leu Phe Thr Glu Cys Tyr
    610             615             620

Ser Ser Asp Glu Asp Leu Ala Glu Gln Leu Leu Val Tyr Ser Cys Glu
625             630             635             640

Ala Trp Gly Gly Ser Asn Cys Leu Glu Leu Ala Val Glu Ala Thr Asp
            645             650             655

Gln His Phe Thr Ala Gln Pro Gly Val Gln Asn Phe Leu Ser Lys Gln
            660             665             670

Trp Tyr Gly Glu Ile Ser Arg Asp Thr Lys Asn Trp Lys Ile Ile Leu
    675             680             685

Cys Leu Phe Ile Ile Pro Leu Val Gly Cys Gly Phe Val Ser Phe Arg
    690             695             700

Lys Lys Pro Val Asp Lys His Lys Lys Leu Leu Trp Tyr Tyr Val Ala
705             710             715             720

Phe Phe Thr Ser Pro Phe Val Val Phe Ser Trp Asn Val Val Phe Tyr
            725             730             735

Ile Ala Phe Leu Leu Leu Phe Ala Tyr Val Leu Leu Met Asp Phe His
            740             745             750

Ser Val Pro His Pro Pro Glu Leu Val Leu Tyr Ser Leu Val Phe Val
            755             760             765

Leu Phe Cys Asp Glu Val Arg Gln Trp Tyr Val Asn Gly Val Asn Tyr
    770             775             780

Phe Thr Asp Leu Trp Asn Val Met Asp Thr Leu Gly Leu Phe Tyr Phe
785             790             795             800
```

```
Ile Ala Gly Ile Val Phe Arg Leu His Ser Ser Asn Lys Ser Ser Leu
            805             810                 815

Tyr Ser Gly Arg Val Ile Phe Cys Leu Asp Tyr Ile Ile Phe Thr Leu
            820             825                 830

Arg Leu Ile His Ile Phe Thr Val Ser Arg Asn Leu Gly Pro Lys Ile
            835             840                 845

Ile Met Leu Gln Arg Met Leu Ile Asp Val Phe Phe Phe Leu Phe Leu
    850             855             860

Phe Ala Val Trp Met Val Ala Phe Gly Val Ala Arg Gln Gly Ile Leu
865             870             875                     880

Arg Gln Asn Glu Gln Arg Trp Arg Trp Ile Phe Arg Ser Val Ile Tyr
            885             890                 895

Glu Pro Tyr Leu Ala Met Phe Gly Gln Val Pro Ser Asp Val Asp Gly
            900             905                 910

Thr Thr Tyr Asp Phe Ala His Cys Thr Phe Thr Gly Asn Glu Ser Lys
            915             920             925

Pro Leu Cys Val Glu Leu Asp Glu His Asn Leu Pro Arg Phe Pro Glu
    930             935                 940

Trp Ile Thr Ile Pro Leu Val Cys Ile Tyr Met Leu Ser Thr Asn Ile
945             950             955             960

Leu Leu Val Asn Leu Leu Val Ala Met Phe Gly Tyr Thr Val Gly Thr
            965             970             975

Val Gln Glu Asn Asn Asp Gln Val Trp Lys Phe Gln Arg Tyr Phe Leu
            980             985             990

Val Gln Glu Tyr Cys Ser Arg Leu Asn Ile Pro Phe Pro Phe Ile Val
    995             1000            1005

Phe Ala Tyr Phe Tyr Met Val Val Lys Lys Cys Phe Lys Cys Cys Cys
    1010            1015            1020

Lys Glu Lys Asn Met Glu Ser Ser Val Cys Cys Phe Lys Asn Glu Asp
1025            1030            1035            1040

Asn Glu Thr Leu Ala Trp Glu Gly Val Met Lys Glu Asn Tyr Leu Val
            1045            1050            1055

Lys Ile Asn Thr Lys Ala Asn Asp Thr Ser Glu Glu Met Arg His Arg
            1060            1065            1070

Phe Arg Gln Leu Asp Thr Lys Leu Asn Asp Leu Lys Gly Leu Leu Lys
            1075            1080            1085

Glu Ile Ala Asn Lys Ile Lys
    1090            1095


<210> 16
<211> 1095
<212> PRT
<213> Homo sapiens

<400> 16
Met Arg Asn Arg Arg Asn Asp Thr Leu Asp Ser Thr Arg Thr Leu Tyr
1               5               10              15
```

Ser Ser Ala Ser Arg Ser Thr Asp Leu Ser Tyr Ser Glu Ser Asp Leu
      20   25   30

Val Asn Phe Ile Gln Ala Asn Phe Lys Lys Arg Glu Cys Val Phe Phe
      35   40   45

Thr Lys Asp Ser Lys Ala Thr Glu Asn Val Cys Lys Cys Gly Tyr Ala
    50   55   60

Gln Ser Gln His Met Glu Gly Thr Gln Ile Asn Gln Ser Glu Lys Trp
65   70   75   80

Asn Tyr Lys Lys His Thr Lys Glu Phe Pro Thr Asp Ala Phe Gly Asp
          85   90   95

Ile Gln Phe Glu Thr Leu Gly Lys Lys Gly Lys Tyr Ile Arg Leu Ser
        100   105   110

Cys Asp Thr Asp Ala Glu Ile Leu Tyr Glu Leu Leu Thr Gln His Trp
      115   120   125

His Leu Lys Thr Pro Asn Leu Val Ile Ser Val Thr Gly Gly Ala Lys
    130   135   140

Asn Phe Ala Leu Lys Pro Arg Met Arg Lys Ile Phe Ser Arg Leu Ile
145   150   155   160

Tyr Ile Ala Gln Ser Lys Gly Ala Trp Ile Leu Thr Gly Gly Thr His
        165   170   175

Tyr Gly Leu Met Lys Tyr Ile Gly Glu Val Val Arg Asp Asn Thr Ile
        180   185   190

Ser Arg Ser Ser Glu Glu Asn Ile Val Ala Ile Gly Ile Ala Ala Trp
      195   200   205

Gly Met Val Ser Asn Arg Asp Thr Leu Ile Arg Asn Cys Asp Ala Glu
    210   215   220

Gly Tyr Phe Leu Ala Gln Tyr Leu Met Asp Asp Phe Thr Arg Asp Pro
225   230   235   240

Leu Tyr Ile Leu Asp Asn Asn His Thr His Leu Leu Leu Val Asp Asn
        245   250   255

Gly Cys His Gly His Pro Thr Val Glu Ala Lys Leu Arg Asn Gln Leu
      260   265   270

Glu Lys Tyr Ile Ser Glu Arg Thr Ile Gln Asp Ser Asn Tyr Gly Gly
      275   280   285

Lys Ile Pro Ile Val Cys Phe Ala Gln Gly Gly Gly Lys Glu Thr Leu
    290   295   300

Lys Ala Ile Asn Thr Ser Ile Lys Asn Lys Ile Pro Cys Val Val Val
305   310   315   320

Glu Gly Ser Gly Gln Ile Ala Asp Val Ile Ala Ser Leu Val Glu Val
        325   330   335

Glu Asp Ala Leu Thr Ser Ser Ala Val Lys Glu Lys Leu Val Arg Phe
      340   345   350

Leu Pro Arg Thr Val Ser Arg Leu Pro Glu Glu Glu Thr Glu Ser Trp
      355   360   365

Ile Lys Trp Leu Lys Glu Ile Leu Glu Cys Ser His Leu Leu Thr Val
      370   375   380

Ile Lys Met Glu Glu Ala Gly Asp Glu Ile Val Ser Asn Ala Ile Ser
385   390   395   400

Tyr Ala Leu Tyr Lys Ala Phe Ser Thr Ser Glu Gln Asp Lys Asp Asn
            405   410   415

Trp Asn Gly Gln Leu Lys Leu Leu Leu Glu Trp Asn Gln Leu Asp Leu
            420   425   430

Ala Asn Asp Glu Ile Phe Thr Asn Asp Arg Arg Trp Glu Ser Ala Asp
            435   440   445

Leu Gln Glu Val Met Phe Thr Ala Leu Ile Lys Asp Arg Pro Lys Phe
    450   455   460

Val Arg Leu Phe Leu Glu Asn Gly Leu Asn Leu Arg Lys Phe Leu Thr
465   470   475   480

His Asp Val Leu Thr Glu Leu Phe Ser Asn His Phe Ser Thr Leu Val
            485   490   495

Tyr Arg Asn Leu Gln Ile Ala Lys Asn Ser Tyr Asn Asp Ala Leu Leu
            500   505   510

Thr Phe Val Trp Lys Leu Val Ala Asn Phe Arg Arg Gly Phe Arg Lys
            515   520   525

Glu Asp Arg Asn Gly Arg Asp Glu Met Asp Ile Glu Leu His Asp Val
    530   535   540

Ser Pro Ile Thr Arg His Pro Leu Gln Ala Leu Phe Ile Trp Ala Ile
545   550   555   560

Leu Gln Asn Lys Lys Glu Leu Ser Lys Val Ile Trp Glu Gln Thr Arg
            565   570   575

Gly Cys Thr Leu Ala Ala Leu Gly Ala Ser Lys Leu Leu Lys Thr Leu
            580   585   590

Ala Lys Val Lys Asn Asp Ile Asn Ala Ala Gly Glu Ser Glu Glu Leu
    595   600   605

Ala Asn Glu Tyr Glu Thr Arg Ala Val Glu Leu Phe Thr Glu Cys Tyr
    610   615   620

Ser Ser Asp Glu Asp Leu Ala Glu Gln Leu Leu Val Tyr Ser Cys Glu
625   630   635   640

Ala Trp Gly Gly Ser Asn Cys Leu Glu Leu Ala Val Glu Ala Thr Asp
            645   650   655

Gln His Phe Ile Ala Gln Pro Gly Val Gln Asn Phe Leu Ser Lys Gln
            660   665   670

Trp Tyr Gly Glu Ile Ser Arg Asp Thr Lys Asn Trp Lys Ile Ile Leu
            675   680   685

Cys Leu Phe Ile Ile Pro Leu Val Gly Cys Gly Phe Val Ser Phe Arg
    690   695   700

Lys Lys Pro Val Asp Lys His Lys Lys Leu Leu Trp Tyr Tyr Val Ala
705   710   715   720

Phe Phe Thr Ser Pro Phe Val Val Phe Ser Trp Asn Val Val Phe Tyr
            725   730   735

Ile Ala Phe Leu Leu Leu Phe Ala Tyr Val Leu Leu Met Asp Phe His
        740   745   750

Ser Val Pro His Pro Pro Glu Leu Val Leu Tyr Ser Leu Val Phe Val
        755   760   765

Leu Phe Cys Asp Glu Val Arg Gln Trp Tyr Val Asn Gly Val Asn Tyr
        770   775   780

Phe Thr Asp Leu Trp Asn Val Met Asp Thr Leu Gly Leu Phe Tyr Phe
785   790   795   800

Ile Ala Gly Ile Val Phe Arg Leu His Ser Ser Asn Lys Ser Ser Leu
                805   810   815

Tyr Ser Gly Arg Val Ile Phe Cys Leu Asp Tyr Ile Ile Phe Thr Leu
            820   825   830

Arg Leu Ile His Ile Phe Thr Val Ser Arg Asn Leu Gly Pro Lys Ile
            835   840   845

Ile Met Leu Gln Arg Met Leu Ile Asp Val Phe Phe Phe Leu Phe Leu
    850   855   860

Phe Ala Xaa Trp Met Val Ala Phe Gly Val Ala Arg Gln Gly Ile Leu
865   870   875   880

Arg Gln Asn Glu Gln Arg Trp Arg Trp Ile Phe Arg Ser Val Ile Tyr
            885   890   895

Glu Pro Tyr Leu Ala Met Phe Gly Gln Val Pro Ser Asp Val Asp Gly
            900   905   910

Thr Thr Tyr Asp Phe Ala His Cys Thr Phe Thr Gly Asn Glu Ser Lys
        915   920   925

Pro Leu Cys Val Glu Leu Asp Glu His Asn Leu Pro Arg Phe Pro Glu
    930   935   940

Trp Ile Thr Ile Pro Leu Val Cys Ile Tyr Met Leu Ser Thr Asn Ile
945   950   955   960

Leu Leu Val Asn Leu Leu Val Ala Met Phe Gly Tyr Thr Val Gly Thr
            965   970   975

Val Gln Glu Asn Asn Asp Gln Val Trp Lys Phe Gln Arg Tyr Phe Leu
        980   985   990

Val Gln Glu Tyr Cys Ser Arg Leu Asn Ile Pro Phe Pro Phe Ile Val
        995   1000   1005

Phe Ala Tyr Phe Tyr Met Val Val Lys Lys Cys Phe Lys Cys Cys Cys
    1010   1015   1020

Lys Glu Lys Asn Met Glu Ser Ser Val Cys Cys Phe Lys Asn Glu Asp
    1025   1030   1035   1040

Asn Glu Thr Leu Ala Trp Glu Gly Val Met Lys Glu Asn Tyr Leu Val
            1045   1050   1055

Lys Ile Asn Thr Lys Ala Asn Asp Thr Ser Glu Glu Met Arg His Arg
            1060   1065   1070

Phe Arg Gln Leu Asp Thr Lys Leu Asn Asp Leu Lys Gly Leu Leu Lys
        1075   1080   1085

Glu Ile Ala Asn Lys Ile Lys
    1090   1095

<210> 17
<211> 652
<212> PRT
<213> Homo sapiens

<400> 17
Met Arg Asn Arg Arg Asn Asp Thr Leu Asp Ser Thr Arg Thr Leu Tyr
 1   5   10   15

Ser Ser Ala Ser Arg Ser Thr Asp Leu Ser Tyr Ser Glu Ser Asp Leu
                20   25   30

Val Asn Phe Ile Gln Ala Asn Phe Lys Lys Arg Glu Cys Val Phe Phe
            35   40   45

Thr Lys Asp Ser Lys Ala Thr Glu Asn Val Cys Lys Cys Gly Tyr Ala
        50   55   60

Gln Ser Gln His Met Glu Gly Thr Gln Ile Asn Gln Ser Glu Lys Trp
 65   70   75   80

Asn Tyr Lys Lys His Thr Lys Glu Phe Pro Thr Asp Ala Phe Gly Asp
                85   90   95

Ile Gln Phe Glu Thr Leu Gly Lys Lys Gly Lys Tyr Ile Arg Leu Ser
                100   105   110

Cys Asp Thr Asp Ala Glu Ile Leu Tyr Glu Leu Leu Thr Gln His Trp
            115   120   125

His Leu Lys Thr Pro Asn Leu Val Ile Ser Val Thr Gly Gly Ala Lys
        130   135   140

Asn Phe Ala Leu Lys Pro Arg Met Arg Lys Ile Phe Ser Arg Leu Ile
145   150   155   160

Tyr Ile Ala Gln Ser Lys Gly Ala Trp Ile Leu Thr Gly Gly Thr His
                165   170   175

Tyr Gly Leu Met Lys Tyr Ile Gly Glu Val Val Arg Asp Asn Thr Ile
            180   185   190

Ser Arg Ser Ser Glu Glu Asn Ile Val Ala Ile Gly Ile Ala Ala Trp
        195   200   205

Gly Met Val Ser Asn Arg Asp Thr Leu Ile Arg Asn Cys Asp Ala Glu
        210   215   220

Gly Tyr Phe Leu Ala Gln Tyr Leu Met Asp Asp Phe Thr Arg Asp Pro
.225   230   235   240

Leu Tyr Ile Leu Asp Asn Asn His Thr His Leu Leu Leu Val Asp Asn
                245   250   255

Gly Cys His Gly His Pro Thr Val Glu Ala Lys Leu Arg Asn Gln Leu
            260   265   270

Glu Lys Tyr Ile Ser Glu Arg Thr Ile Gln Asp Ser Asn Tyr Gly Gly
            275   280   285

Lys Ile Pro Ile Val Cys Phe Ala Gln Gly Gly Gly Lys Glu Thr Leu
        290   295   300

Lys Ala Ile Asn Thr Ser Ile Lys Asn Lys Ile Pro Cys Val Val Val
305   310   315   320

```
Glu Gly Ser Gly Gln Ile Ala Asp Val Ile Ala Ser Leu Val Glu Val
         325             330             335

Glu Asp Ala Leu Thr Ser Ser Ala Val Lys Glu Lys Leu Val Arg Phe
         340             345             350

Leu Pro Arg Thr Val Ser Arg Leu Pro Glu Glu Glu Thr Glu Ser Trp
         355             360             365

Ile Lys Trp Leu Lys Glu Ile Leu Glu Cys Ser His Leu Leu Thr Val
         370             375             380

Ile Lys Met Glu Glu Ala Gly Asp Glu Ile Val Ser Asn Ala Ile Ser
385             390             395             400

Tyr Ala Leu Tyr Lys Ala Phe Ser Thr Ser Glu Gln Asp Lys Asp Asn
             405             410             415

Trp Asn Gly Gln Leu Lys Leu Leu Leu Glu Trp Asn Gln Leu Asp Leu
         420             425             430

Ala Asn Asp Glu Ile Phe Thr Asn Asp Arg Arg Trp Glu Ser Ala Asp
         435             440             445

Leu Gln Glu Val Met Phe Thr Ala Leu Ile Lys Asp Arg Pro Lys Phe
         450             455             460

Val Arg Leu Phe Leu Glu Asn Gly Leu Asn Leu Arg Lys Phe Leu Thr
465             470             475             480

His Asp Val Leu Thr Glu Leu Phe Ser Asn His Phe Ser Thr Leu Val
             485             490             495

Tyr Arg Asn Leu Gln Ile Ala Lys Asn Ser Tyr Asn Asp Ala Leu Leu
             500             505             510

Thr Phe Val Trp Lys Leu Val Ala Asn Phe Arg Arg Gly Phe Arg Lys
         515             520             525

Glu Asp Arg Asn Gly Arg Asp Glu Met Asp Ile Glu Leu His Asp Val
         530             535             540

Ser Pro Ile Thr Arg His Pro Leu Gln Ala Leu Phe Ile Trp Ala Ile
545             550             555             560

Leu Gln Asn Lys Lys Glu Leu Ser Lys Val Ile Trp Glu Gln Thr Arg
             565             570             575

Gly Cys Thr Leu Ala Ala Leu Gly Ala Ser Lys Leu Leu Lys Thr Leu
         580             585             590

Ala Lys Val Lys Asn Asp Ile Asn Ala Ala Gly Glu Ser Glu Glu Leu
         595             600             605

Ala Asn Glu Tyr Glu Thr Arg Ala Val Glu Leu Phe Thr Glu Cys Tyr
         610             615             620

Ser Ser Asp Glu Asp Leu Ala Glu Gln Leu Leu Val Tyr Ser Cys Glu
625             630             635             640

Ala Trp Gly Gly Leu Glu His His His His His His
         645             650
```

<210> 18
<211> 1095
<212> PRT
<213> Homo sapiens

```
<400> 18
Met Arg Asn Arg Arg Asn Asp Thr Leu Asp Ser Thr Arg Thr Leu Tyr
1               5                   10                  15

Ser Ser Ala Ser Arg Ser Thr Asp Leu Ser Tyr Ser Glu Ser Asp Leu
            20                  25                  30

Val Asn Phe Ile Gln Ala Asn Phe Lys Lys Arg Glu Cys Val Phe Phe
        35                  40                  45

Thr Lys Asp Ser Lys Ala Thr Glu Asn Val Cys Lys Cys Gly Tyr Ala
    50                  55                  60

Gln Ser Gln His Met Glu Gly Thr Gln Ile Asn Gln Ser Glu Lys Trp
65                  70                  75                  80

Asn Tyr Lys Lys His Thr Lys Glu Phe Pro Thr Asp Ala Phe Gly Asp
                85                  90                  95

Ile Gln Phe Glu Thr Leu Gly Lys Lys Gly Lys Tyr Ile Arg Leu Ser
            100                 105                 110

Cys Asp Thr Asp Ala Glu Ile Leu Tyr Glu Leu Leu Thr Gln His Trp
        115                 120                 125

His Leu Lys Thr Pro Asn Leu Val Ile Ser Val Thr Gly Gly Ala Lys
    130                 135                 140

Asn Phe Ala Leu Lys Pro Arg Met Arg Lys Ile Phe Ser Arg Leu Ile
145                 150                 155                 160

Tyr Ile Ala Gln Ser Lys Gly Ala Trp Ile Leu Thr Gly Gly Thr His
            165                 170                 175

Tyr Gly Leu Met Lys Tyr Ile Gly Glu Val Val Arg Asp Asn Thr Ile
        180                 185                 190

Ser Arg Ser Ser Glu Glu Asn Ile Val Ala Ile Gly Ile Ala Ala Trp
    195                 200                 205

Gly Met Val Ser Asn Arg Asp Thr Leu Ile Arg Asn Cys Asp Ala Glu
    210                 215                 220

Gly Tyr Phe Leu Ala Gln Tyr Leu Met Asp Asp Phe Thr Arg Asp Pro
225                 230                 235                 240

Leu Tyr Ile Leu Asp Asn Asn His Thr His Leu Leu Leu Val Asp Asn
            245                 250                 255

Gly Cys His Gly His Pro Thr Val Glu Ala Lys Leu Arg Asn Gln Leu
        260                 265                 270

Glu Lys Tyr Ile Ser Glu Arg Thr Ile Gln Asp Ser Asn Tyr Gly Gly
    275                 280                 285

Lys Ile Pro Ile Val Cys Phe Ala Gln Gly Gly Gly Lys Glu Thr Leu
    290                 295                 300

Lys Ala Ile Asn Thr Ser Ile Lys Asn Lys Ile Pro Cys Val Val Val
305                 310                 315                 320

Glu Gly Ser Gly Gln Ile Ala Asp Val Ile Ala Ser Leu Val Glu Val
            325                 330                 335

Glu Asp Ala Leu Thr Ser Ser Ala Val Lys Glu Lys Leu Val Arg Phe
            340                 345                 350
```

```
Leu Pro Arg Thr Val Ser Arg Leu Pro Glu Glu Glu Thr Glu Ser Trp
    355             360             365

Ile Lys Trp Leu Lys Glu Ile Leu Glu Cys Ser His Leu Leu Thr Val
    370             375             380

Ile Lys Met Glu Glu Ala Gly Asp Glu Ile Val Ser Asn Ala Ile Ser
385             390             395             400

Tyr Ala Leu Tyr Lys Ala Phe Ser Thr Ser Glu Gln Asp Lys Asp Asn
            405             410             415

Trp Asn Gly Gln Leu Lys Leu Leu Leu Glu Trp Asn Gln Leu Asp Leu
            420             425             430

Ala Asn Asp Glu Ile Phe Thr Asn Asp Arg Arg Trp Glu Ser Ala Asp
            435             440             445

Leu Gln Glu Val Met Phe Thr Ala Leu Ile Lys Asp Arg Pro Lys Phe
    450             455             460

Val Arg Leu Phe Leu Glu Asn Gly Leu Asn Leu Arg Lys Phe Leu Thr
465             470             475             480

His Asp Val Leu Thr Glu Leu Phe Ser Asn His Phe Ser Thr Leu Val
            485             490             495

Tyr Arg Asn Leu Gln Ile Ala Lys Asn Ser Tyr Asn Asp Ala Leu Leu
            500             505             510

Thr Phe Val Trp Lys Leu Val Ala Asn Phe Arg Arg Gly Phe Arg Lys
            515             520             525

Glu Asp Arg Asn Gly Arg Asp Glu Met Asp Ile Glu Leu His Asp Val
    530             535             540

Ser Pro Ile Thr Arg His Pro Leu Gln Ala Leu Phe Ile Trp Ala Ile
545             550             555             560

Leu Gln Asn Lys Lys Glu Leu Ser Lys Val Ile Trp Glu Gln Thr Arg
            565             570             575

Gly Cys Thr Leu Ala Ala Leu Gly Ala Ser Lys Leu Leu Lys Thr Leu
            580             585             590

Ala Lys Val Lys Asn Asp Ile Asn Ala Ala Gly Glu Ser Glu Glu Leu
            595             600             605

Ala Asn Glu Tyr Glu Thr Arg Ala Val Glu Leu Phe Thr Glu Cys Tyr
    610             615             620

Ser Ser Asp Glu Asp Leu Ala Glu Gln Leu Leu Val Tyr Ser Cys Glu
625             630             635             640

Ala Trp Gly Gly Ser Asn Cys Leu Glu Leu Ala Val Glu Ala Thr Asp
            645             650             655

Gln His Phe Ile Ala Gln Pro Gly Val Gln Asn Phe Leu Ser Lys Gln
            660             665             670

Trp Tyr Gly Glu Ile Ser Arg Asp Thr Lys Asn Trp Lys Ile Ile Leu
    675             680             685

Cys Leu Phe Ile Ile Pro Leu Val Gly Cys Gly Phe Val Ser Phe Arg
    690             695             700

Lys Lys Pro Val Asp Lys His Lys Lys Leu Leu Trp Tyr Tyr Val Ala
705             710             715             720
```

Phe Phe Thr Ser Pro Phe Val Val Phe Ser Trp Asn Val Val Phe Tyr
            725   730   735

Ile Ala Phe Leu Leu Leu Phe Ala Tyr Val Leu Leu Met Asp Phe His
            740   745   750

Ser Val Pro His Pro Pro Glu Leu Val Leu Tyr Ser Leu Val Phe Val
            755   760   765

Leu Phe Cys Asp Glu Val Arg Gln Trp Tyr Val Asn Gly Val Asn Tyr
    770   775   780

Phe Thr Asp Leu Trp Asn Val Met Asp Thr Leu Gly Leu Phe Tyr Phe
785   790   795   800

Ile Ala Gly Ile Val Phe Arg Leu His Ser Ser Asn Lys Ser Ser Leu
                805   810   815

Tyr Ser Gly Arg Val Ile Phe Cys Leu Asp Tyr Ile Ile Phe Thr Leu
            820   825   830

Arg Leu Ile His Ile Phe Thr Val Ser Arg Asn Leu Gly Pro Lys Ile
        835   840   845

Ile Met Leu Gln Arg Met Leu Ile Asp Val Phe Phe Phe Leu Phe Leu
    850   855   860

Phe Ala Xaa Trp Met Val Ala Phe Gly Val Ala Arg Gln Gly Ile Leu
865   870   875   880

Arg Gln Asn Glu Gln Arg Trp Arg Trp Ile Phe Arg Ser Val Ile Tyr
                885   890   895

Glu Pro Tyr Leu Ala Met Phe Gly Gln Val Pro Ser Asp Val Asp Gly
            900   905   910

Thr Thr Tyr Asp Phe Ala His Cys Thr Phe Thr Gly Asn Glu Ser Lys
            915   920   925

Pro Leu Cys Val Glu Leu Asp Glu His Asn Leu Pro Arg Phe Pro Glu
    930   935   940

Trp Ile Thr Ile Pro Leu Val Cys Ile Tyr Met Leu Ser Thr Asn Ile
945   950   955   960

Leu Leu Val Asn Leu Leu Val Ala Met Phe Gly Tyr Thr Val Gly Thr
            965   970   975

Val Gln Glu Asn Asn Asp Gln Val Trp Lys Phe Gln Arg Tyr Phe Leu
            980   985   990

Val Gln Glu Tyr Cys Ser Arg Leu Asn Ile Pro Phe Pro Phe Ile Val
        995   1000   1005

Phe Ala Tyr Phe Tyr Met Val Val Lys Lys Cys Phe Lys Cys Cys Cys
    1010   1015   1020

Lys Glu Lys Asn Met Glu Ser Ser Val Cys Cys Phe Lys Asn Glu Asp
1025   1030   1035   1040

Asn Glu Thr Leu Ala Trp Glu Gly Val Met Lys Glu Asn Tyr Leu Val
            1045   1050   1055

Lys Ile Asn Thr Lys Ala Asn Asp Thr Ser Glu Glu Met Arg His Arg
            1060   1065   1070

```
Phe Arg Gln Leu Asp Thr Lys Leu Asn Asp Leu Lys Gly Leu Leu Lys
        1075                1080                1085

Glu Ile Ala Asn Lys Ile Lys
    1090                1095


<210> 19
<211> 652
<212> PRT
<213> Homo sapiens

<400> 19
Met Arg Asn Arg Arg Asn Asp Thr Leu Asp Ser Thr Arg Thr Leu Tyr
 1               5                  10                  15

Ser Ser Ala Ser Arg Ser Thr Asp Leu Ser Tyr Ser Glu Ser Asp Leu
            20                  25                  30

Val Asn Phe Ile Gln Ala Asn Phe Lys Lys Arg Glu Cys Val Phe Phe
        35                  40                  45

Thr Lys Asp Ser Lys Ala Thr Glu Asn Val Cys Lys Cys Gly Tyr Ala
    50                  55                  60

Gln Ser Gln His Met Glu Gly Thr Gln Ile Asn Gln Ser Glu Lys Trp
 65                 70                  75                  80

Asn Tyr Lys Lys His Thr Lys Glu Phe Pro Thr Asp Ala Phe Gly Asp
                85                  90                  95

Ile Gln Phe Glu Thr Leu Gly Lys Lys Gly Lys Tyr Ile Arg Leu Ser
            100                 105                 110

Cys Asp Thr Asp Ala Glu Ile Leu Tyr Glu Leu Leu Thr Gln His Trp
        115                 120                 125

His Leu Lys Thr Pro Asn Leu Val Ile Ser Val Thr Gly Gly Ala Lys
    130                 135                 140

Asn Phe Ala Leu Lys Pro Arg Met Arg Lys Ile Phe Ser Arg Leu Ile
145                 150                 155                 160

Tyr Ile Ala Gln Ser Lys Gly Ala Trp Ile Leu Thr Gly Gly Thr His
                165                 170                 175

Tyr Gly Leu Met Lys Tyr Ile Gly Glu Val Val Arg Asp Asn Thr Ile
            180                 185                 190

Ser Arg Ser Ser Glu Glu Asn Ile Val Ala Ile Gly Ile Ala Ala Trp
        195                 200                 205

Gly Met Val Ser Asn Arg Asp Thr Leu Ile Arg Asn Cys Asp Ala Glu
    210                 215                 220

Gly Tyr Phe Leu Ala Gln Tyr Leu Met Asp Asp Phe Thr Arg Asp Pro
225                 230                 235                 240

Leu Tyr Ile Leu Asp Asn Asn His Thr His Leu Leu Leu Val Asp Asn
                245                 250                 255

Gly Cys His Gly His Pro Thr Val Glu Ala Lys Leu Arg Asn Gln Leu
            260                 265                 270

Glu Lys Tyr Ile Ser Glu Arg Thr Ile Gln Asp Ser Asn Tyr Gly Gly
        275                 280                 285
```

Lys Ile Pro Ile Val Cys Phe Ala Gln Gly Gly Gly Lys Glu Thr Leu
290   295   300

Lys Ala Ile Asn Thr Ser Ile Lys Asn Lys Ile Pro Cys Val Val Val
305   310   315   320

Glu Gly Ser Gly Gln Ile Ala Asp Val Ile Ala Ser Leu Val Glu Val
                325   330   335

Glu Asp Ala Leu Thr Ser Ser Ala Val Lys Glu Lys Leu Val Arg Phe
            340   345   350

Leu Pro Arg Thr Val Ser Arg Leu Pro Glu Glu Glu Thr Glu Ser Trp
    355   360   365

Ile Lys Trp Leu Lys Glu Ile Leu Glu Cys Ser His Leu Leu Thr Val
370   375   380

Ile Lys Met Glu Glu Ala Gly Asp Glu Ile Val Ser Asn Ala Ile Ser
385   390   395   400

Tyr Ala Leu Tyr Lys Ala Phe Ser Thr Ser Glu Gln Asp Lys Asp Asn
            405   410   415

Trp Asn Gly Gln Leu Lys Leu Leu Leu Glu Trp Asn Gln Leu Asp Leu
        420   425   430

Ala Asn Asp Glu Ile Phe Thr Asn Asp Arg Arg Trp Glu Ser Ala Asp
        435   440   445

Leu Gln Glu Val Met Phe Thr Ala Leu Ile Lys Asp Arg Pro Lys Phe
    450   455   460

Val Arg Leu Phe Leu Glu Asn Gly Leu Asn Leu Arg Lys Phe Leu Thr
465   470   475   480

His Asp Val Leu Thr Glu Leu Phe Ser Asn His Phe Ser Thr Leu Val
            485   490   495

Tyr Arg Asn Leu Gln Ile Ala Lys Asn Ser Tyr Asn Asp Ala Leu Leu
        500   505   510

Thr Phe Val Trp Lys Leu Val Ala Asn Phe Arg Arg Gly Phe Arg Lys
    515   520   525

Glu Asp Arg Asn Gly Arg Asp Glu Met Asp Ile Glu Leu His Asp Val
530   535   540

Ser Pro Ile Thr Arg His Pro Leu Gln Ala Leu Phe Ile Trp Ala Ile
545   550   555   560

Leu Gln Asn Lys Lys Glu Leu Ser Lys Val Ile Trp Glu Gln Thr Arg
            565   570   575

Gly Cys Thr Leu Ala Ala Leu Gly Ala Ser Lys Leu Leu Lys Thr Leu
        580   585   590

Ala Lys Val Lys Asn Asp Ile Asn Ala Ala Gly Glu Ser Glu Glu Leu
    595   600   605

Ala Asn Glu Tyr Glu Thr Arg Ala Val Glu Leu Phe Thr Glu Cys Tyr
    610   615   620

Ser Ser Asp Glu Asp Leu Ala Glu Gln Leu Leu Val Tyr Ser Cys Glu
625   630   635   640

Ala Trp Gly Gly Leu Glu His His His His His His
        645   650

```
<210> 20
<211> 1104
<212> PRT
<213> Homo sapiens

<400> 20
Met Ser Phe Arg Ala Ala Arg Leu Ser Met Arg Asn Arg Arg Asn Asp
1               5               10              15

Thr Leu Asp Ser Thr Arg Thr Leu Tyr Ser Ser Ala Ser Arg Ser Thr
            20              25              30

Asp Leu Ser Tyr Ser Glu Ser Asp Leu Val Asn Phe Ile Gln Ala Asn
        35              40              45

Phe Lys Lys Arg Glu Cys Val Phe Phe Thr Lys Asp Ser Lys Ala Thr
    50              55              60

Glu Asn Val Lys Lys Cys Gly Tyr Ala Gln Ser Gln His Met Glu Gly
65              70              75              80

Thr Gln Ile Asn Gln Ser Glu Lys Trp Asn Tyr Lys Lys His Thr Lys
            85              90              95

Glu Phe Pro Thr Asp Ala Phe Gly Asp Ile Gln Phe Glu Thr Leu Gly
        100             105             110

Lys Lys Gly Lys Tyr Ile Arg Leu Ser Cys Asp Thr Asp Ala Glu Ile
        115             120             125

Leu Tyr Glu Leu Leu Thr Gln His Trp His Leu Lys Thr Pro Asn Leu
    130             135             140

Val Ile Ser Val Thr Gly Gly Ala Lys Asn Phe Ala Leu Lys Pro Arg
145             150             155             160

Met Arg Lys Ile Phe Ser Arg Leu Ile Tyr Ile Ala Gln Ser Lys Gly
            165             170             175

Ala Trp Ile Leu Thr Gly Gly Thr His Tyr Gly Leu Met Lys Tyr Ile
        180             185             190

Gly Glu Val Val Arg Asp Asn Thr Ile Ser Arg Ser Ser Glu Glu Asn
        195             200             205

Ile Val Ala Ile Gly Ile Ala Ala Trp Gly Met Val Ser Asn Arg Asp
    210             215             220

Thr Leu Ile Arg Asn Cys Asp Ala Glu Gly Tyr Phe Leu Ala Gln Tyr
225             230             235             240

Leu Met Asp Asp Phe Thr Arg Asp Pro Leu Cys Ile Leu Asp Asn Asn
            245             250             255

His Thr His Leu Leu Leu Val Asp Asn Gly Cys His Gly His Pro Thr
        260             265             270

Val Glu Ala Lys Leu Arg Asn Gln Leu Glu Lys Tyr Ile Ser Glu Arg
    275             280             285

Thr Ile Gln Asp Ser Asn Tyr Gly Gly Lys Ile Pro Ile Val Cys Phe
    290             295             300

Ala Gln Gly Gly Gly Lys Glu Thr Leu Lys Ala Ile Asn Thr Ser Ile
305             310             315             320
```

```
Lys Asn Lys Ile Pro Cys Val Val Val Glu Gly Ser Gly Gln Ile Ala
            325             330             335

Asp Val Ile Ala Ser Leu Val Glu Val Glu Asp Ala Leu Thr Ser Ser
            340             345             350

Ala Val Lys Glu Lys Leu Val Arg Phe Leu Pro Arg Thr Val Ser Arg
            355             360             365

Leu Pro Glu Glu Glu Thr Glu Ser Trp Ile Lys Trp Leu Lys Glu Ile
        370             375             380

Leu Glu Cys Ser His Leu Leu Thr Val Ile Lys Met Glu Glu Ala Gly
385             390             395             400

Asp Glu Ile Val Ser Asn Ala Ile Ser Tyr Ala Leu Tyr Lys Ala Phe
                405             410             415

Ser Thr Ser Glu Gln Asp Lys Asp Asn Trp Asn Gly Gln Leu Lys Leu
            420             425             430

Leu Leu Glu Trp Asn Gln Leu Asp Leu Ala Asn Asp Glu Ile Phe Thr
        435             440             445

Asn Asp Arg Arg Trp Glu Ser Ala Asp Leu Gln Glu Val Met Phe Thr
    450             455             460

Ala Leu Ile Lys Asp Arg Pro Lys Phe Val Arg Leu Phe Leu Glu Asn
465             470             475             480

Gly Leu Asn Leu Arg Lys Phe Leu Thr His Asp Val Leu Thr Glu Leu
            485             490             495

Phe Ser Asn His Phe Ser Thr Leu Val Tyr Arg Asn Leu Gln Ile Ala
            500             505             510

Lys Asn Ser Tyr Asn Asp Ala Leu Leu Thr Phe Val Trp Lys Leu Val
            515             520             525

Ala Asn Phe Arg Arg Gly Phe Arg Lys Glu Asp Arg Asn Gly Arg Asp
    530             535             540

Glu Met Asp Ile Glu Leu His Asp Val Ser Pro Ile Thr Arg His Pro
545             550             555             560

Leu Gln Ala Leu Phe Ile Trp Ala Ile Leu Gln Asn Lys Lys Glu Leu
            565             570             575

Ser Lys Val Ile Trp Glu Gln Thr Arg Gly Cys Thr Leu Ala Ala Leu
            580             585             590

Gly Ala Ser Lys Leu Leu Lys Thr Leu Ala Lys Val Lys Asn Asp Ile
            595             600             605

Asn Ala Ala Gly Glu Ser Glu Glu Leu Ala Asn Glu Tyr Glu Thr Arg
    610             615             620

Ala Val Glu Leu Phe Thr Glu Cys Tyr Ser Ser Asp Glu Asp Leu Ala
625             630             635             640

Glu Gln Leu Leu Val Tyr Ser Cys Glu Ala Trp Gly Gly Ser Asn Cys
            645             650             655

Leu Glu Leu Ala Val Glu Ala Thr Asp Gln His Phe Ile Ala Gln Pro
            660             665             670

Gly Val Gln Asn Phe Leu Ser Lys Gln Trp Tyr Gly Glu Ile Ser Arg
    675             680             685
```

Asp Thr Lys Asn Trp Lys Ile Ile Leu Cys Leu Phe Ile Ile Pro Leu
    690   695   700

Val Gly Cys Gly Phe Val Ser Phe Arg Lys Lys Pro Val Asp Lys His
705   710   715   720

Lys Lys Leu Leu Trp Tyr Tyr Val Ala Phe Phe Thr Ser Pro Phe Val
            725   730   735

Val Phe Ser Trp Asn Val Val Phe Tyr Ile Ala Phe Leu Leu Leu Phe
            740   745   750

Ala Tyr Val Leu Leu Met Asp Phe His Ser Val Pro His Pro Pro Glu
        755   760   765

Leu Val Leu Tyr Ser Leu Val Phe Val Leu Phe Cys Asp Glu Val Arg
    770   775   780

Gln Trp Tyr Val Asn Gly Val Asn Tyr Phe Thr Asp Leu Trp Asn Val
785   790   795   800

Met Asp Thr Leu Gly Leu Phe Tyr Phe Ile Ala Gly Ile Val Phe Arg
            805   810   815

Leu His Ser Ser Asn Lys Ser Ser Leu Tyr Ser Gly Arg Val Ile Phe
        820   825   830

Cys Leu Asp Tyr Ile Ile Phe Thr Leu Arg Leu Ile His Ile Phe Thr
    835   840   845

Val Ser Arg Asn Leu Gly Pro Lys Ile Ile Met Leu Gln Arg Met Leu
850   855   860

Ile Asp Val Phe Phe Phe Leu Phe Leu Phe Ala Val Trp Met Val Ala
865   870   875   880

Phe Gly Val Ala Arg Gln Gly Ile Leu Arg Gln Asn Glu Gln Arg Trp
            885   890   895

Arg Trp Ile Phe Arg Ser Val Ile Tyr Glu Pro Tyr Leu Ala Met Phe
        900   905   910

Gly Gln Val Pro Ser Asp Val Asp Gly Thr Thr Tyr Asp Phe Ala His
        915   920   925

Cys Thr Phe Thr Gly Asn Glu Ser Lys Pro Leu Cys Val Glu Leu Asp
    930   935   940

Glu His Asn Leu Pro Arg Phe Pro Glu Trp Ile Thr Ile Pro Leu Val
945   950   955   960

Cys Ile Tyr Met Leu Ser Thr Asn Ile Leu Leu Val Asn Leu Leu Val
            965   970   975

Ala Met Phe Gly Tyr Thr Val Gly Thr Val Gln Glu Asn Asn Asp Gln
        980   985   990

Val Trp Lys Phe Gln Arg Tyr Phe Leu Val Gln Glu Tyr Cys Ser Arg
        995   1000   1005

Leu Asn Ile Pro Phe Pro Phe Ile Val Phe Ala Tyr Phe Tyr Met Val
    1010   1015   1020

Val Lys Lys Cys Phe Lys Cys Cys Cys Lys Glu Lys Asn Met Glu Ser
1025   1030   1035   1040

Ser Val Cys Cys Phe Lys Asn Glu Asp Asn Glu Thr Leu Ala Trp Glu
            1045   1050   1055

Gly Val Met Lys Glu Asn Tyr Leu Val Lys Ile Asn Thr Lys Ala Asn
            1060   1065   1070

Asp Thr Ser Glu Glu Met Arg His Arg Phe Arg Gln Leu Asp Thr Lys
         1075   1080   1085

Leu Asn Asp Leu Lys Gly Leu Leu Lys Glu Ile Ala Asn Lys Ile Lys
      1090   1095   1100

<210> 21
<211> 931
<212> PRT
<213> Homo sapiens

<400> 21
Met Val Gly Gly Cys Arg Trp Thr Glu Asp Val Glu Pro Ala Glu Val
   1   5   10   15

Lys Glu Lys Met Ser Phe Arg Ala Ala Arg Leu Ser Met Arg Asn Arg
            20   25   30

Arg Asn Asp Thr Leu Asp Ser Thr Arg Thr Leu Tyr Ser Ser Ala Ser
         35   40   45

Arg Ser Thr Asp Leu Ser Tyr Ser Glu Ser Ala Ser Phe Tyr Ala Ala
      50   55   60

Phe Arg Thr Gln Thr Cys Pro Ile Met Ala Ser Trp Asp Leu Val Asn
   65   70   75   80

Phe Ile Gln Ala Asn Phe Lys Lys Arg Glu Cys Val Phe Phe Thr Lys
               85   90   95

Asp Ser Lys Ala Thr Glu Asn Val Cys Lys Cys Gly Tyr Ala Gln Ser
            100   105   110

Gln His Met Glu Gly Thr Gln Ile Asn Gln Ser Glu Lys Trp Asn Tyr
         115   120   125

Lys Lys His Thr Lys Glu Phe Pro Thr Asp Ala Phe Gly Asp Ile Gln
      130   135   140

Phe Glu Thr Leu Gly Lys Lys Gly Lys Tyr Ile Arg Leu Ser Cys Asp
145   150   155   160

Thr Asp Ala Glu Ile Leu Tyr Glu Leu Leu Thr Gln His Trp His Leu
               165   170   175

Lys Thr Pro Asn Leu Val Ile Ser Val Thr Gly Gly Ala Lys Asn Phe
            180   185   190

Ala Leu Lys Pro Arg Met Arg Lys Ile Phe Ser Arg Leu Ile Tyr Ile
         195   200   205

Ala Gln Ser Lys Gly Ala Trp Ile Leu Thr Gly Gly Thr His Tyr Gly
      210   215   220

Leu Met Lys Tyr Ile Gly Glu Val Val Arg Asp Asn Thr Ile Ser Arg
225   230   235   240

```
Ser Ser Glu Glu Asn Ile Val Ala Ile Gly Ile Ala Ala Trp Gly Met
            245                   250                   255

Val Ser Asn Arg Asp Thr Leu Ile Arg Asn Cys Asp Ala Glu Gly Tyr
            260                   265                   270

Phe Leu Ala Gln Tyr Leu Met Asp Asp Phe Thr Arg Asp Pro Leu Tyr
            275                   280                   285

Ile Leu Asp Asn Asn His Thr His Leu Leu Leu Val Asp Asn Gly Cys
            290                   295                   300

His Gly His Pro Thr Val Glu Ala Lys Leu Arg Asn Gln Leu Glu Lys
305                   310                   315                   320

Tyr Ile Ser Glu Arg Thr Ile Gln Asp Ser Asn Tyr Gly Gly Lys Ile
                325                   330                   335

Pro Ile Val Cys Phe Ala Gln Gly Gly Gly Lys Glu Thr Leu Lys Ala
                340                   345                   350

Ile Asn Thr Ser Ile Lys Asn Lys Ile Pro Cys Val Val Val Glu Gly
        355                   360                   365

Ser Gly Gln Ile Ala Asp Val Ile Ala Ser Leu Val Glu Val Glu Asp
    370                   375                   380

Ala Leu Thr Ser Ser Ala Val Lys Glu Lys Leu Val Arg Phe Leu Pro
385                   390                   395                   400

Arg Thr Val Ser Arg Leu Pro Glu Glu Glu Thr Glu Ser Trp Ile Lys
                405                   410                   415

Trp Leu Lys Glu Ile Leu Glu Cys Ser His Leu Leu Thr Val Ile Lys
                420                   425                   430

Met Glu Glu Ala Gly Asp Glu Ile Val Ser Asn Ala Ile Ser Tyr Ala
        435                   440                   445

Leu Tyr Lys Ala Phe Ser Thr Ser Glu Gln Asp Lys Asp Asn Trp Asn
    450                   455                   460

Gly Gln Leu Lys Leu Leu Leu Glu Trp Asn Gln Leu Asp Leu Ala Asn
465                   470                   475                   480

Asp Glu Ile Phe Thr Asn Asp Arg Arg Trp Glu Lys Ser Lys Pro Arg
                485                   490                   495

Leu Arg Asp Thr Ile Ile Gln Val Thr Trp Leu Glu Asn Gly Arg Ile
                500                   505                   510

Lys Val Glu Ser Lys Asp Val Thr Asp Gly Lys Ala Ser Ser His Met
            515                   520                   525

Leu Val Val Leu Lys Ser Ala Asp Leu Gln Glu Val Met Phe Thr Ala
        530                   535                   540

Leu Ile Lys Asp Arg Pro Lys Phe Val Arg Leu Phe Leu Glu Asn Gly
545                   550                   555                   560

Leu Asn Leu Arg Lys Phe Leu Thr His Asp Val Leu Thr Glu Leu Phe
                565                   570                   575

Ser Asn His Phe Ser Thr Leu Val Tyr Arg Asn Leu Gln Ile Ala Lys
            580                   585                   590

Asn Ser Tyr Asn Asp Ala Leu Leu Thr Phe Val Trp Lys Leu Val Ala
        595                   600                   605
```

```
Asn Phe Arg Arg Gly Phe Arg Lys Glu Asp Arg Asn Gly Arg Asp Glu
    610               615         620

Met Asp Ile Glu Leu His Asp Val Ser Pro Ile Thr Arg His Pro Leu
625           630           635               640

Gln Ala Leu Phe Ile Trp Ala Ile Leu Gln Asn Lys Lys Glu Leu Ser
            645           650               655

Lys Val Ile Trp Glu Gln Thr Arg Gly Cys Thr Leu Ala Ala Leu Gly
            660           665           670

Ala Ser Lys Leu Leu Lys Thr Leu Ala Lys Val Lys Asn Asp Ile Asn
    675               680           685

Ala Ala Gly Glu Ser Glu Glu Leu Ala Asn Glu Tyr Glu Thr Arg Ala
    690               695           700

Val Gly Glu Ser Thr Val Trp Asn Ala Val Val Gly Ala Asp Leu Pro
705               710           715               720

Cys Gly Thr Asp Ile Ala Ser Gly Thr His Arg Pro Asp Gly Gly Glu
                725           730               735

Leu Phe Thr Glu Cys Tyr Ser Ser Asp Glu Asp Leu Ala Glu Gln Leu
            740           745           750

Leu Val Tyr Ser Cys Glu Ala Trp Gly Gly Ser Asn Cys Leu Glu Leu
            755           760           765

Ala Val Glu Ala Thr Asp Gln His Phe Ile Ala Gln Pro Gly Val Gln
    770           775           780

Asn Phe Leu Ser Lys Gln Trp Tyr Gly Glu Ile Ser Arg Asp Thr Lys
785           790           795               800

Asn Trp Lys Ile Ile Leu Cys Leu Phe Ile Ile Pro Leu Val Gly Cys
            805           810               815

Gly Phe Val Ser Phe Arg Lys Lys Pro Val Asp Lys His Lys Lys Leu
        820           825           830

Leu Trp Tyr Tyr Val Ala Phe Phe Thr Ser Pro Phe Val Val Phe Ser
        835           840           845

Trp Asn Val Val Phe Tyr Ile Ala Phe Leu Leu Leu Phe Ala Tyr Val
    850           855           860

Leu Leu Met Asp Phe His Ser Val Pro His Pro Pro Glu Leu Val Leu
865           870           875               880

Tyr Ser Leu Val Phe Val Leu Phe Cys Asp Glu Lys Arg Lys Thr Ala
            885           890           895

Met Asp Gln Thr Asp Glu Asp Leu Phe Pro Tyr Gly Ala Phe Tyr Gln
        900           905           910

Phe Leu Met Ile Ser Arg Ser Phe Arg Gly Glu Glu Met Ser Ile Gly
    915           920           925

Lys Gln His
    930
```